

**MINE RECLAMATION PLAN
FOR THE
KRAMER JUNCTION BORROW PIT**

Prepared For:

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Submitted To:

County of San Bernardino
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APPENDICIES

- 1 Revegetation Plan; Jericho Systems October 2017 (revised per DMR Comments February 2018)
- 2 Appendix G - Mitigation Measures from the Final Environmental Impact Report/Environmental Impact Statement State Route 58 Kramer Junction Expressway Project (SCH#2007051051); Volumes I and II. July 2014.

MAP SHEETS (attached)

- 1 Kramer Junction Borrow Pit Mine Plan
- 2 Kramer Junction Borrow Pit Reclamation Plan

1.0 MINE PLAN

Kiewit Infrastructure West Co. (Kiewit) is submitting an application for a Mine Reclamation Plan (Plan) for the Kramer Junction Borrow Pit. The borrow pit will be the source for up to 3 million cubic yards (cy) of material for the State Route 58 (SR-58) Kramer Junction Expressway Project. The California Department of Transportation (Caltrans) is realigning and widening to four lanes approximately 13 miles of SR-58 from the Kern County line east about 7.5 miles east of Kramer Junction. The project also includes a partial cloverleaf at the SR-58 and US 395 junction and railroad grade separation alleviating existing traffic issues.

The proposed project site is located approximately 2 miles east of the SR-58 and Boron interchange and 1 mile east of the Kern County boundary (see Figure 1 - Regional Map). The privately-held 100-acre parcel (APN 0498-232-47) is within the west part of San Bernardino County in the SW¼ of Section 34, Township 11 North, Range 7 West, SBBM (see Figure 2 - Vicinity Map). The site is being leased by Kiewit from the landowner. Access for workers to the site will be from the existing SR-58 highway about 1/3 mile north on either Sand Hill Road easement on the west or Castle Road on east (if allowable). The material will be transported to the new SR-58 alignment approximately 630 to 1,200 feet north of the project site on right-of-ways or easements with adjacent parcel owners on the west and east sides as shown on Caltrans National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) Re-Validation Form (August 8, 2017) to be supplied prior to transporting material. The site has three 60-foot wide private landing strips that run diagonally across the site which is known as the Boron air field. The remainder of the site is vacant open desert land.

The purpose of this application is to permit the borrow site for a 3-year period to provide mostly landscape and fill material for construction of the SR-58 Kramer Junction Expressway Project. This project is also known as the Kramer Junction Gap Closure Project, is being constructed as a joint project by Caltrans and the Federal Highway Administration (FHWA) tentatively starting in early 2018 and completed by the end of the year 2020. Kiewit is proposing to utilize approximately 63.75 acres of the 100-acre parcel for the removal of up to 3 million cubic yards (mcy) for a mining period of three years. Reclamation of the site will commence immediately upon termination of mining. Mined products will include landscape and general fill material.

Caltrans included the proposed project site and access routes defined by Caltrans as Area 2 Borrow Area, in their project design and environmental review. Caltrans concluded in their NEPA/CEQA Re-Validation Form (August 8, 2017) that the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for SR-58 Kramer Junction Expressway Project (July 1, 2014) remains valid with implementation of project design and mitigation measures for the potential impacts of the Kramer Junction Borrow Pit area.

The borrow pit site is vacant, appears to have been impacted by historic grazing and by 3 unpaved air strips, and consists of saltbush and alkali sink scrub. The adjacent properties are vacant to the west, north, and east. The owner's residence lies to the southwest and two other residences are located 600 to 1,000 feet to the south. The existing SR-58 Highway lies to the west and south and the new alignment is aligned west to east to the north.

Land Owner: Kramer Apartments Corporation
40716 Highway 395
Boron, Ca 93516
760-762-5220
kramerservices@yahoo.com

Lease Holder/Operator: Kiewit Infrastructure West Co.
12700 Stowe Dr. Suite 180
Poway, CA 92064
Tim Howells
858-486-3410
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Representative: Lilburn Corporation
1905 Business Center Drive
San Bernardino, California 92408
Martin Derus - President
909-890-1818
marty@lilburncorp.com

General Plan Designation: Resource Conservation (RC)

APN: 0498-323-47; SW¼ of Section 34, T11N, R7W ex south 990.7 feet

Parcel Size: 100 acres

Mine Area: approx. 63.75 acres (6.75 acres currently disturbed; 57 acres undisturbed)

General Plan Designation: Resource Conservation (RC)

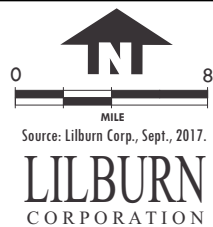
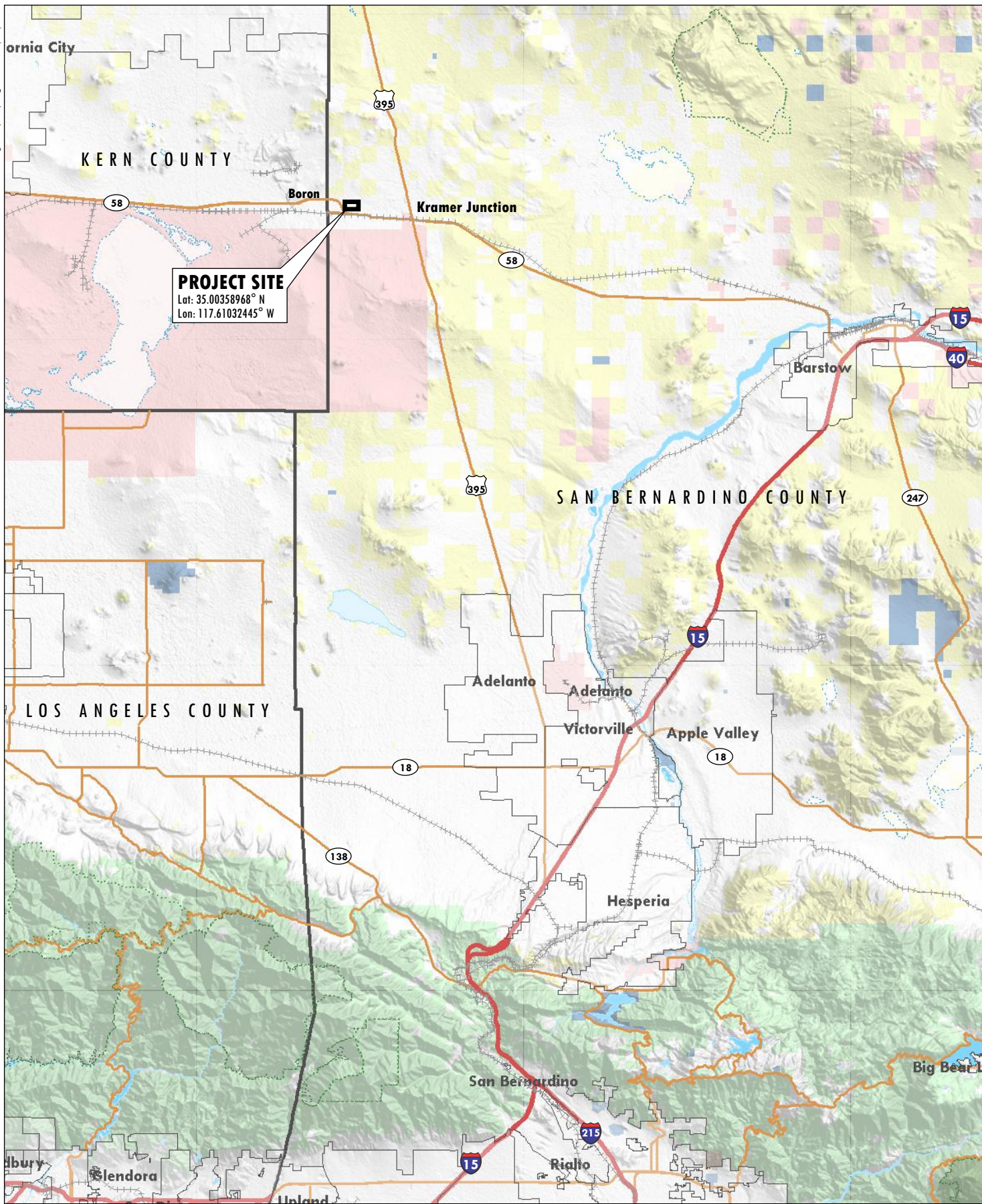
Estimate Operating Life: 3 years from County approval

Estimated Operations Termination Date: January 31, 2021 (with approval by February 1, 2018) or 3 years from date of County approval

Area to be Reclaimed: 63.75 acres

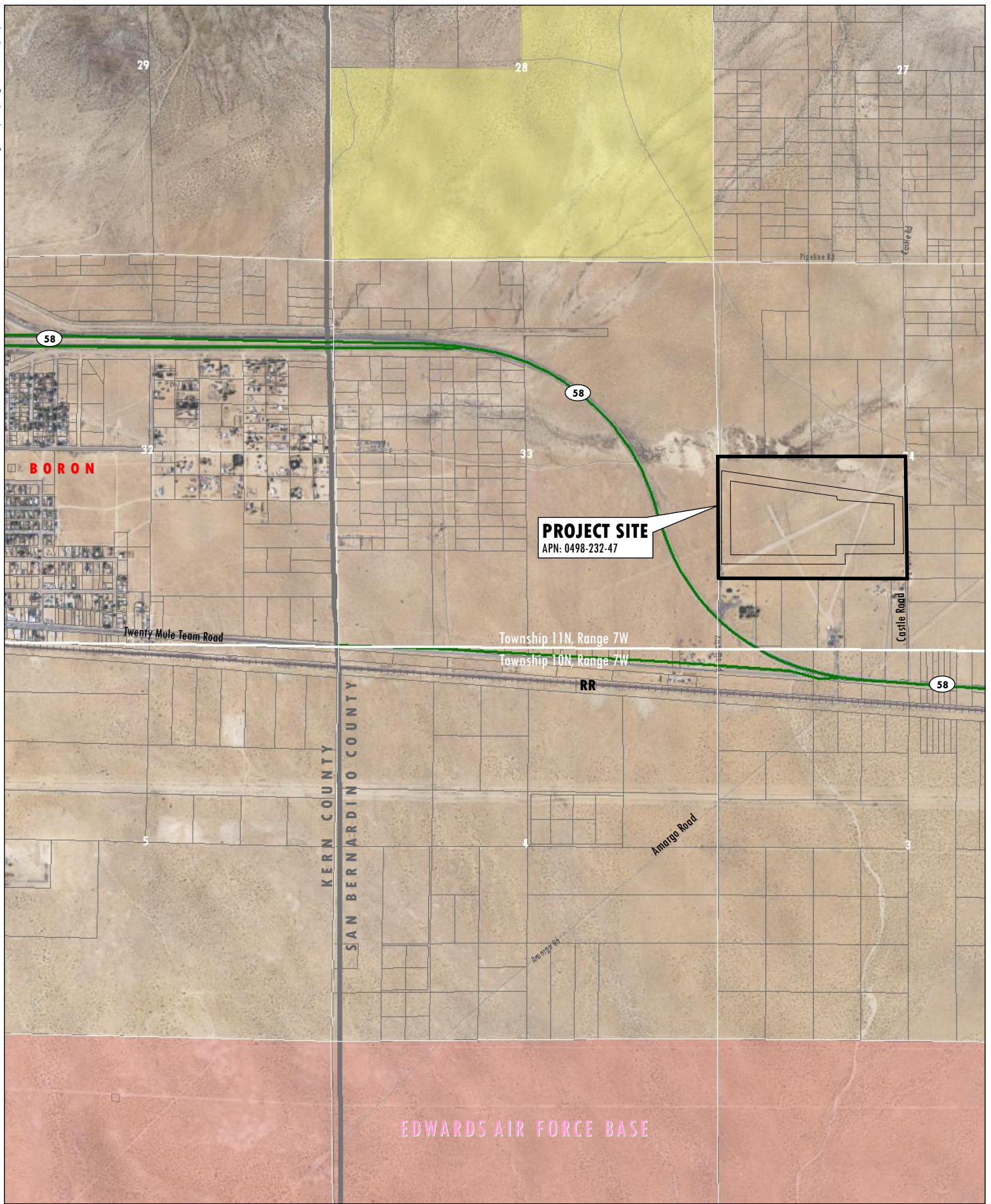
Estimated Reclamation Completion: January 31, 2022 (followed by approx. 5 years revegetation monitoring/remediation or until success criteria achieved)

Reclaimed End Use: Open space; private air strips



REGIONAL LOCATION
Kramer Junction Pit - State Route 58 Kramer Junction Expressway Project
County of San Bernardino, California

FIGURE 1



1.1 MINING OPERATIONS

Please refer to Figure 3 and/or Sheet 1 to review the Mine Plan and cross sections. Mining operations will be undertaken over a period of up to 3 years beginning in early 2018 and extending until early 2021. The site and haul roads to the new SR-58 alignment will be fenced with a combination of desert tortoise fencing and 4-strand wire according to the protocols in Chapter 8 of the Desert Tortoise Field Manual (USFWS 2009).

Mining will take place on approximately 61.5 acres; additional ancillary uses include an equipment storage/parking area, well and pond area, and haul truck road on the northeast or northwest depending on location of an access easement to be determined. The approximate acreages are included in Table 1 below and total roughly 64 acres.

Table 1
Mine Uses and Acreage

Use	Existing Disturbed	Undisturbed	Total Area
Borrow Pit and Slopes	6	55.5	61.5
Equipment Storage	0	1.25	1.25
Well and Storage Pond	0.25	0	0.25
Haul Road within the Project Site	0.5	0.25	0.75
Totals	6.75	57.0	63.75

Source: Kiewit and Lilburn 2017.

Mining of the site is achieved with one loader, two excavators, and a dozer to break, move, and load material directly into double belly truck trailers with capacity of up to approximately 50 cy (typical). A complete list of the typical equipment to be used on-site and for transport to the SR-58 construction alignment is included in Table 2. There will be no crushing, screening, or conveying conducted on-site. There will be no buildings or scale on-site. On occasion, a grader may be used on-site for mining or haul road development and maintenance.

Slopes of 3H:1V (horizontal: vertical) to depths of 25 to 40 feet will be produced from excavation of the pit. The top of the pit will range from 2,485 feet amsl on the north with a depth elevation of 2,445 feet amsl to a top of pit elevation of 2,495 feet amsl to a depth of 2,455 feet amsl on the south. Setbacks of 50 feet in width will be maintained on the west and east. A 200 to 350-foot setback will be established on the south to provide setbacks from the residences to the south. These setbacks will include desert tortoise and 4-strand wire fencing with warning signs on the outside edge of the property, secured gates, and a one-lane dirt perimeter access road inside the fence. Access into the borrow pit will be via a 5% decline ramp 50 feet in width located on the northeast side of the pit to allow direct access to the SR-58 construction alignment. Note that the ramp may be on the northwest slope if the alternative haul road is utilized. There will also be a ramp for vehicles on the southwest side as well. Once off the project site, the transport trucks will utilize a 50-foot wide haul road within an acquired easement or right-of-way to be negotiated with properties to the north for a distance of approximately 630 feet on the east side or 1,200 feet on the west side to the construction alignment.

Table 2
Mobile Mine and Transport Equipment (Typical)

Equipment Make / Model	Typical Number	Hours/day	Tier Level	Purpose
CAT D9 Dozer	1	20	Tier 4 Final	Excavate and loosen material. Road construction and maint.
Peterbilt/Freightliner Double Belly Trailers	20-26	20	Compliant	Transportation of material to new SR 58 alignment.
CAT 16 Grader	1	4	Tier 3	Maintain roads.
CAT 390 Excavator	2	20	Tier 4 Final	Excavate and load material into trucks.
Cat 980M Loader	1	20	Tier 4	Excavate and load material into trucks.
Cat 740 Water Truck	1	4	Tier 3	Water for dust control on mining areas, haul roads, and stockpiles.
Kentworth T300 Lube Truck (Fuel)	1	4	Compliant	Maintain and fuel on-site equipment.
John Deere 9560	1	4	Tier 4i	Haul Road Maintenance

Source: Kiewit August 2017

Note that equipment listed is typical and makes and models may be interchanged with like equipment.

Truck traffic is anticipated at a maximum rate of 500 loads per day depending on the truck capacity and construction demand. Production and material transport will be approximately 15,000 cy/day, 350,000 cy /month, and 2 million cy per year. If operations utilize the double belly transport trucks with a capacity of approximately 50 cy, the number of truck trips would average about 300 trips/day. A total of up to 3 million cy of fill and landscape material is estimated to be removed.

The trucks will not travel on any public roads or interact with any public traffic. The proposed haul roads on easements or right-of-ways on the north to be determined allow the trucks to travel directly from the borrow pit to the construction alignment. To minimize dust generation, a water truck will be retained for use during excavations and loading of haul trucks, prior to departing from the site. The mine operator shall water spray working mine areas and access roads on a regular basis and more frequently as needed during windy conditions. Water used for dust control shall be obtained by an on-site well located in the southwest corner of the site. In addition, a lined pond (100 feet by 300 feet) constructed in the southwest corner of the excavation area will be used to hold water for dust control. Un-surfaced haul roads and access roads may also have dust controlled with biodegradable dust suppressants or covered with road base material as needed.

Site operations will be conducted primarily from 5:30 am till 8 pm, 6 days per week. Occasionally operations may be conducted 24 hours/day and up to 7 days per week depending on construction needs. All refuse shall be disposed into approved trash bins and removed by a commercial vendor. Portable toilets will be used on-site and serviced by a commercial vendor. Bottled water will be provided to employees.

1.2 MINE WASTE

The top one-foot of surface material will be pushed into storage berms along the outside of the pit as shown on the mine plan. No overburden or waste material is expected; therefore, no method is required or planned for handling of mine waste.

There will be no imported waste materials or chemicals brought to the project site besides fuel and equipment maintenance fluids. Maintenance and fueling will be conducted by a mobile maintenance truck and Best Management Practices (BMPs) will be implemented. All used fluids will be removed from the equipment and from the site following standard regulations. No used fluids will be stored on-site.

1.3 ORE PROCESSING

The borrow pit material will be loaded directly into trucks for transport to the construction alignment to the north. No crushing or screening or any process plant facilities are utilized on-site. There is no need for on-site diesel-powered electricity or commercial power. No fuel tanks will be placed on-site.

1.4 PRODUCTION WATER

Water use on-site will be utilized to minimize dust generation. A water truck will be used for wetting-down material and roads during mining activities and for wetting-down haul trucks prior to site departure. Approximately 16,000 gallons of water a day may be used for dust suppression activities with a 20-hour work day. The 8,000-gallon water truck will fill at the on-site well or pond and spray roads and operation areas as needed. It is not anticipated that there will be any excess water from the wetting-down procedure; therefore, no recycling is required or planned.

1.5 EROSION AND SEDIMENTATION CONTROL

The Applicant is required per Caltrans contract for complying with Statewide National Pollutant Discharge Elimination System (NPDES) and preparing and implementing a Storm Water Pollution Protection Plan (SWPPP) including applicable BMPs. The control of drainage, erosion, and sedimentation of the mine site will primarily involve the following primary BMPs:

- Limiting surface disturbance to the minimum area required for active operations;
- Monitoring erosion on slopes and implementation of one or more soil stabilization practices as applicable for the site such as: earthen berms or dikes; silt fence; fiber rolls; straw bales; gravel bags; sediment basin(s); and straw mulch.
- Stabilizing disturbed areas through grading slopes to 3H:1V; and
- After project completion - final revegetation by seeding or hydro-seeding with native species.

The project site is relatively flat with a slight gradient of less than 1% to the north-north west. There are no drainage or run-off channels that will be affected by the pit. Principally only direct precipitation may affect the site. The pit is designed with a 1% grade towards the northwest to collect any run-off that may collect in the pit and off the slopes in that area that will act as a sediment or percolation basin. The slopes are designed at very gentle 3H:1V that would reduce possible slope erosion and runoff channeling down the slopes. There will no run-off off away from the site. All precipitation will be collected within the borrow pit and allowed to evaporate or percolate.

During the course of mining and the final design of the 3H:1V slope contouring, some erosion may occur during heavy rainfall on the slopes. Erosion caused by rainfall will be retained at the bottom of the pit and rills or channels backfilled. Any water retained within the pit will not impact adjacent properties or local roads due to its containment.

After each major storm event or at least quarterly, any final slopes and the access and haul roads will be visually inspected to determine if any substantial erosion is evident such as sheet, rill or gully erosion. A major storm event is defined as precipitation totals of 0.5 inches per 24-hour period. Any rills or gullies in excess of 8 square inches in cross sectional area and are more than 10 linear feet located on final slopes shall be arrested using methods listed above.

Revegetation will be used for the long-term control of erosion. Access roads and mined surfaces will be water sprayed as necessary to reduce wind erosion during operations.

The following mitigation measures are included in the EIS/EIR and will be implemented by the Applicant as required per contract with Caltrans to protect water quality. Note that the measures below are summarized and that the complete list of mitigation measures relevant to the proposed project is included in Appendix 2.

- **WQ-1:** Contractor will comply with the provisions of the Statewide NPDES permit.
- **WQ-2:** Contractor will be responsible for preparing a SWPPP according to the Department's (Caltran's) standards, incorporating all the BMPs listed in the contract plans.
- **WQ-3:** (Updated reference) Table 2-1 of the Department's Construction Site BMPs Manual (Caltrans CTSW-RT-17-314.18.1; May 2017) include BMPs; the contractor will implement all the appropriate BMPs.

1.6 BLASTING

There will be no blasting on this project site, therefore, no explosives will be used or stored on site.

2.0 RECLAMATION PLAN

2.1 LAND USE

The Kramer Junction Borrow Pit is vacant with the 3 unpaved air strips and consists of saltbush and alkali sink scrub vegetation. The adjacent properties are vacant to the west, north, and east. The owner's residence lies to the southwest and two other residences are located 600 to 1,000 feet to the south. The existing SR-58 Highway lies to the west and south and the new alignment is aligned west to east to the north.

Approximately 7 acres are disturbed by the air strips and the site is flat with elevations ranging from 2,485 to 2,495 feet amsl. The planned depth of the pit will range from 2,445 to 2,455 feet amsl.

The surrounding land uses are as follows:

North	Adjacent properties are vacant desert open space. The new SR-58 alignment is about 650 to 1,200 feet to the north.
South	South of this mine is mostly vacant desert land with the exception of three residences; one belonging to the land owner of the project site.
East	Adjacent property is vacant desert land.
West	Adjacent property is vacant desert land with the existing SR-58 to the west.

2.2 VISIBILITY

The mine site is located approximately 2 miles east of the community of Boron within unincorporated land within San Bernardino County. The borrow pit, after initial excavation, will be below grade and there will be no process plants on-site. As operations reach a depth of 10 feet, mining operations will be screened from the scattered residences. Note that there will over 13 miles of road construction being undertaken in the vicinity.

2.3 VEGETATION

Caltrans included the proposed project site and access roads defined by Caltrans as the Area 2 Borrow Area in their project design and environmental review. Caltrans concluded in their NEPA/CEQA Re-Validation Form (August 8, 2017) that the EIR/EIS for the SR-58 Kramer Junction Expressway Project (July 1, 2014) remains valid with implementation of project design and mitigation measures for the potential impacts of the Kramer Junction Borrow Pit area. Information, impacts, and mitigation measures discussed below for plants are from the two documents referenced above.

The site consists of atriplex (saltbush or spinescale) scrub with desert sink scrub located to the north of the pit which is outside of the project foot print. No natural communities of special

concern (as listed in the California Natural Diversity Database (CNNDDB)) are present. The site is co-dominated by spinescale saltbush (*Atriplex spinifera*) and white bursage (*Ambrosia dumosa*). Other shrub species include burrobush (*Ambrosia salsola*), winter fat (*Krascheninnikovia lanata*), Mojave cottonthorn (*Tetradymia stenolepis*), and all-scale (*Atriplex polycarpa*). Approximately 57 acres of the site is atriplex scrub and 7 acres are disturbed by the dirt air strips.

Threatened and Endangered Plants and Other Special Status Plants

According to the CNDDDB maintained by the CDFW, no plant species designated as threatened or endangered by the State of California or the Federal Government were identified on the site. During rare plant surveys, a total of four plant species listed as a 1B.2 or 4.2 listed plants on the California Native Plant Society (CNPS) Rare Plant Inventory were present in the vicinity with habitat present on the project site. These include: Barstow woolly sunflower (*Eriophyllum mohavense*) (CNPS List 1B.2); desert cymopterus (*Cymopterus deserticola*) (CNPS List 1B.2); Mojave spineflower (CNPS List 1B.2); and crowned muilla (*Muilla coronate*) (CNPS List 4.2). CNPS Designations are defined as follows:

- 1B.2: Plants rare and endangered in California and throughout their range; Fairly endangered in California (20 – 80% occurrences threatened).
- 4.2: Plants of limited distribution, a watch list; fairly endangered in California (20%–80% occurrences threatened).

The following avoidance, minimization, and mitigation measures are included in the EIS/EIR and will be implemented by the Applicant as required per contract with Caltrans to protect the special-status plants that could be present.

- **BIO-6:** Preconstruction surveys for rare plants will be conducted by a qualified biologist during the appropriate blooming period. Any plants identified will be flagged and avoided, if feasible.
- **BIO-7:** The project design will minimize impacts to special-status plants to the extent feasible.
- **BIO-8:** Temporary Fence (Type ESA). ESA fencing will be established around those populations of special-status plants that are to be protected in place to prohibit all construction activities and access from impacting the rare plant populations within the project area.
- **BIO-9:** Seeds will be collected from all those plant populations deemed appropriate for seed relocation if suitable habitat is available.
- **BIO-10:** Biological Monitor. A qualified biological monitor will monitor construction activities to ensure avoidance of any construction related impacts to special status plant species.

- **BIO-11:** Species Protection Measures will be made to ensure that temporary staging areas, storage areas, and access roads involved with this project will occur in the area of permanent direct impact. Access to the project site will be gained from the existing SR-58. No new access roads will be built as part of this project except what was analyzed on project maps (refer to area 2-DARR'S 75 acres). Staging areas and equipment storage will take place on existing right-of-way of the realigned SR-58.
- **BIO-12:** Joshua trees within the direct impact area with a circumference of 50 inches measured at four feet, measuring 15 feet high, or occurring in a cluster of 10 or more within close proximity to each other will be transplanted or stockpiled for future transplanting to the extent feasible. Joshua trees will be shown on the plans for avoidance or transplanting.
- **BIO-13:** An Environmentally Sensitive Area (ESA) will be established around all Joshua Trees within the project area that are to be protected in place. To prohibit all construction activities and access from impacting the Joshua trees within the project area, temporary ESA fencing would be placed around the Joshua trees.

2.4 WILDLIFE

Caltrans included the proposed project site and access roads defined by Caltrans as the Area 2 Borrow Area in their project design and environmental review. Caltrans concluded in their NEPA/CEQA Re-Validation Form (August 8, 2017) that the EIR/EIS for the SR-58 Kramer Junction Expressway Project (July 1, 2014) remains valid with implementation of project design and mitigation measures for the potential impacts of the Kramer Junction Borrow Pit area. Information, impacts, and mitigation measures discussed below for wildlife are from the two documents referenced above.

A total of six non-listed special-status animals are known to occur in the general region, and four have the potential to occur within the project area. These four are burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), Le Conte's thrasher (*Toxostoma lecontei*), and America badger (*Taxidea taxus*). Potential habitat for the other two species, prairie falcon (*Falco mexicanus*) and silver-haired bat (*Lasionycteris noctivagans*), is not present in the project area.

The following avoidance, minimization, and mitigation measures are included in the EIS/EIR and will be implemented by the Applicant as required per contract with Caltrans to protect the special-status animals that could be present. Lands acquired to mitigate the effects of the project on the desert tortoise and the Mohave ground squirrel will also mitigate any potential effect to migratory bird species.

- **BIO-14:** A preconstruction survey of the project site for burrowing owl will be conducted; the time lapse between surveys and site disturbance will be as short as possible and will be determined based on consultation with CDFW, but will not exceed 7 days prior to commencing construction activities.

- **BIO-16: Species Protection.** If burrowing owls are found on-site during the preconstruction sweep:
 - Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a biologist can verify through non-invasive methods that either the owls have not begun egg laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent flight.
 - A Burrowing Owl Mitigation and Monitoring Plan will be submitted to CDFW for review and approval.
 - All relocation shall be approved by CDFW.
- **BIO-17:** If, during preconstruction surveys, a burrowing owl is encountered, habitat compensation will be assessed and coordinated with CDFW during preparation of the Burrowing Owl Mitigation and Monitoring Plan. Appropriate mitigation lands for burrowing owl will be determined during preparation and CDFW agency approval of the Burrowing Owl Mitigation and Monitoring Plan. CDFW may allow the mitigation lands acquired following the above mitigation ratios to account for more than just burrowing owl, if species-specific habitat criteria are met in the habitat acquisition proposal. As provided in CDFW (2012), the mitigation for permanent habitat loss necessitates replacement with an equal or greater habitat area.
- **BIO-18:** To avoid any impacts to migratory birds (including loggerhead shrike and Le Conte's thrasher), vegetation removal must take place between September 15 and February 15 (outside of the breeding season). If, because of construction schedules, it is necessary to remove vegetation during the breeding season (February 16 through September 14), a biological construction monitor must perform a preconstruction survey of the entire area where vegetation will be removed. All measures shall be taken to minimize impacts on nesting birds. A preconstruction sweep for nesting birds will be conducted prior to construction activities outside of the nesting season as well. The sweep will include areas used for staging, storage, sign placement, or parking. If an active bird nest is detected during surveys, a nest avoidance buffer will be implemented with a radius of 100 feet or as determined by the biological monitor. Depending on the species and nesting stage, it may be prudent to have a biological monitor present during construction to monitor nest activity while still allowing construction to take place.
- **BIO-19:** A preconstruction survey will take place to ensure that no American badgers are located within the project limits.
- **BIO-20:** Biological Monitor. A qualified biological monitor will monitor construction activities to ensure avoidance of any construction-related impacts on American badger.
- **BIO-21:** Species Protection. If a burrow occupied by badgers is found during construction, all construction activities will cease in the vicinity of the burrow, and coordination with CDFW will take place so that appropriate protective measures can be implemented.

Threatened and Endangered Animals

Two animal species listed as threatened under state and federal endangered species laws were found along portions of the new SR-58 alignment and have potential for occurrence in the project area; the desert tortoise (*Gopherus agassizii*) (federally and state Threatened) and the Mohave ground squirrel (*Xerpermophilus mohavensis*) (state Threatened).

The proposed borrow pit which consists of saltbush scrub and is impacted by graded air strips and proximity to the existing SR-58, was deemed low quality for desert tortoise in the EIR/EIS. The site was surveyed by Caltrans biologists and no sign were detected. The site is not within critical habitat and will be further isolated by the new SR-58 alignment to the north.

As part of the overall project, Caltrans has been in contact with the U.S. Fish and Wildlife Service (FWS) and the California Department of Fish and Wildlife (CDFW) over the course of the project's environmental review. The original Biological Opinion (BO) (FWS-SB/KRN-12BO2013-14FO423) dated June 30, 2014 was amended with BO (FWS-SBR-12BO230-17A0886) dated June 14, 2017. This amendment assessed several additional impact areas including the 100-acre Area 2 Borrow Area (proposed project). The amended BO concluded that as long as the avoidance and mitigation measures are followed from the original BO, the *May Affect But Not Likely To Adversely Affect* determination for desert tortoise and *No Take* determination for Mojave Ground Squirrel will be maintained.

The following avoidance, minimization, and mitigation measures are included in the EIS/EIR and will be implemented by the Applicant as required per contract with Caltrans to protect the special-status animals that could be present. Lands are to be acquired by Caltrans to mitigate the effects of the project on the desert tortoise and the Mohave ground squirrel and will also mitigate any potential effect to migratory bird species. Note that the measures below are summarized and that the complete list of mitigation measures relevant to the proposed project is included in Appendix 2.

- **BIO-22:** Field Contact Representative or Resident Engineer. Caltrans will assign/designate a staff person to act as the Field Contact Representative (FCR) or Resident Engineer (RE) with specific experience in the implementation of environmental compliance programs.
- **BIO-23:** Authorized Biologists and Biological Monitors. Caltrans will review the credentials of all individuals seeking approval as Authorized Biologists prior to being submitted to USFWS to ensure the individuals possess the appropriate experience and training to serve as Authorized Biologists.
- **BIO-24:** Pre-Construction Surveys. Within desert tortoise habitat, Authorized Biologists will conduct pre-construction surveys of the project area including the right-of-way, staging areas, access routes, and all other construction sites.

- **BIO-25:** Biological Resource Information Program. Caltrans will be responsible for ensuring that all workers at the site receive worker environmental awareness training prior to and throughout construction.
- **BIO-26:** Species Protection. Caltrans will ensure that the Authorized Biologist(s) will follow the procedures for handling tortoises in the USFWS field manual (2009). Only the Authorized Biologist(s) will move desert tortoises and then solely for the purpose of moving them from harm's way.
- **BIO-27:** Locating a Dead or Injured Tortoise. The Authorized Biologist will notify USFWS within 24 hours upon locating a dead or injured desert tortoise during construction, operation, and maintenance of the project.
- **BIO-28:** Designated Areas. Caltrans will confine all project activities to the right-of-way, approved access roads, and storage areas.
- **BIO-29:** Permanent Fence. Following preconstruction surveys and the relocation of desert tortoises if determined necessary by the Authorized Biologist but prior to the start of construction, Caltrans will require the contractor to install permanent fencing to exclude desert tortoises from all work areas and rights-of-way under the direction of an Authorized Biologist. Caltrans will construct the fence according to the protocols provided in Chapter 8 of the Desert Tortoise Field Manual (USFWS 2009).
- **BIO-30:** Construction Monitoring. An appropriate number of Authorized Biologists and Biological Monitors will be available during construction for the protection of desert tortoise.

In addition to the measures listed above for desert tortoise, the following measures will be implemented to protect MGS and to ensure a Will Not Jeopardize the Continued Existence determination under the California Endangered Species Act (CESA).

- **BIO-31:** Biological Monitor. A qualified biological monitor will monitor construction activities to ensure avoidance of any construction activities related to MGS.
- **BIO-32:** Biological Resource Information Program. MGS Awareness Training will be provided and integrated with WEAP Training prior to construction.
- **BIO-33:** Species Protection. If any MGS are injured or killed during the course of construction, work must stop in the immediate area, the animal must be left in place as is, and the project monitor and the Resident Engineer will be immediately notified.

In Mitigation Measures **BIO-34 through 37** in the EIR/EIS, Caltrans, CDFW, and USFWS have agreed to mitigate affected areas of the overall project area at specific compensation ratios of 5:1 to 3:1 depending on location and habitat for both the desert tortoise and the Mojave Ground Squirrel. The areas of compensation take into account the proposed project area.

2.5 RECLAMATION

The intent of SMARA is to “maintain an effective and comprehensive surface mining and reclamation policy with regulation of surface mining operations so as to assure that: (a) adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative uses; (b) the production and conservation of minerals are encouraged, while giving consideration to values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment; and (c) residual hazards to the public health and safety are eliminated” (Section 2712).

Article 9, Section 3700 of SMARA states the following: “Reclamation of mined lands shall be implemented in conformance with standards in this Article (Reclamation Standards). The standards shall apply to each surface mining operation to the extent that:

- (1) they are consistent with required mitigation identified in conformance with CEQA; and
- (2) they are consistent with the planned or actual subsequent use or uses of the mining site.”

The objectives of this Reclamation Plan are to:

- Eliminate or reduce environmental impacts from mining operations;
- Reclaim in a usable condition for post-mining end uses which will include open space/habitat and re-grading of existing air strips;
- Reshape mining features and revegetate disturbed areas to minimize aesthetic and biological impacts; and
- Reclaim the site as necessary to eliminate hazards to public health and safety.

Please refer to Figure 4 and/or Sheet 2 to review the Reclamation Plan. Reclamation of the mine will be undertaken at the completion of with the mining operations related to the construction of the SR-58 Kramer Junction Expressway. Final reclamation will occur upon termination of excavation activities. Any over-steepened slopes will be backfilled or recontoured to 3H:1V. Fill material will be excess material pushed up onto slopes to create 3H:1V. The fill will be compacted by tracking the dozer over the slope to achieve necessary compaction consistent with final end use of open space. Any rock or gravel on the roads will be removed and used as fill in the pit area. Final graded slopes, the pit floor, storage areas, and roads will be revegetated. Surface material in all compacted working areas and roads will be loosened by mechanical means to a depth of 1-foot. Revegetation activities will generally commence in late fall to correspond with the rainy season of the area. The recontoured slopes and pit floor will be seeded with the recommended seed mix in this Reclamation Plan.

2.6 REVEGETATION

The revegetation plan will implement a series of activities to revegetate portions of the site after completion of mining operations. All 64 acres if disturbed will be reclaimed and revegetated. The site is a relatively barren environment due to lack of topsoil and the extreme hot temperatures and very dry conditions. Daytime temperatures average over 100° F. from May through September and annual rainfall is less than 6 inches.

Physical reclamation procedures will include regrading to achieve planned slopes of 3H:1V as needed, ripping compacted surfaces to a depth of about 1-foot to hold moisture, adding stockpiled surface material containing banked seeds in a stable, uniform thickness to a depth up to one-foot deep, seeding or hydro-seeding with commercial available native seeds, and staking or flagging reclaimed areas to eliminate additional disturbance.

Baseline Data

Jericho Systems prepared a *Revegetation Plan* and collected baseline vegetation data on-site including detailed plant diversity, density, and richness information for use in the revegetation plan. This report is included in Appendix 1, dated October 2017. The site consists of spinescale salt bush scrub community.

Jericho established plant plots in undisturbed portions of the mine site to sample and record existing plant occurrences per SMARA recommendations. Table 3 shows the results of the plant plot data gathered on-site in terms of cover, density and species richness. The revegetation effort will focus on the perennial pioneer shrubs, herbs, and annuals that aid in providing organic material, holding moisture, and breaking up the surface.

The dominant vegetation at the reference site is salt bush scrub. Average shrub cover was measured at 26% co-dominated by spinescale saltbush (15%) and white bursage (10%); average shrub density measured 15 shrubs per 1,000 square foot plot (6 spinescale saltbush and 7 white bursage); and an average of 5 species was observed to occur per 1,000 square foot plot. Complete data tables are included in Appendix 1.

Site Preparation

Prior to mining undisturbed areas, specific rare plants (Barstow woolly sunflower, desert cymopterus, Mojave spineflower, and crowned muilla), seeds from these rare plants if on-site, and soil will be salvaged under the direction of a project botanist per the mitigation measures in Section 2.3 above. Selected species of cacti found on-site favorable for salvage will be marked and salvaged for transplanting to an area on-site ready for reclamation under the direction of the botanist. On-site vegetation will be removed and crushed with the soil salvaged.

Per Sections 88.01.050(f) and 88.01.060(c) of the County of San Bernardino's Development Code, all Joshua trees that are proposed to be removed will be transplanted or stockpiled for future transplanting wherever possible. As previously discussed, there are several scattered Joshua trees within the 63.75-acre site. Salvaged Joshua trees as well as any silver cholla shall be

transplanted to the nearest feasible areas, within the leased 100-acre parcel, following approved transplant methods for this species as required per contract with Caltrans designated biologists, their guidelines and mitigation measure BIO-12 in the EIS/EIR and listed above.

The available surface material will be salvaged to a depth of one-foot and graded into temporary shallow stockpiles during initial grading then into more long-term stockpiles below grade as shown on the Mine Plan, Sheet 1 and Figure 3 for future reclamation. The salvaged material will be stockpiled separately and clearly identified. This surface material will be used as growth media and seed bank for the revegetation effort. If the stockpiles are susceptible to wind erosion, there will be water sprayed to form a surface crest or covered with larger gravel materials.

Revegetation

Upon completion of mining, all disturbed slopes, access roads, and the pit floor will be reclaimed and revegetated within one year. Any rock or gravel on the roads will be removed and used as fill in the pit area. The slope, pit floor, storage areas, and roads will be ripped to a depth of 1.5 feet or greater parallel to the slope to break up compacted areas and aid in holding moisture and seeds. The stored surface material will be spread evenly over the areas to be reclaimed up to 1-foot in depth with ridges and furrows graded to aid in holding moisture and windblown seeds. The revegetation area will be seeded with a certified weed-free seed mix applied hydraulically (hydro-seeded). No invasive, non-native plant species will be used in the revegetation plan. Only native seeds tolerant to existing soil and rainfall conditions will be used.

Seeding will take place between November and February after the first substantial rains to take advantage of winter precipitation and eliminate the need for irrigation. Reclaimed areas will be clearly staked and flagged to eliminate additional disturbance. The seed mix will be applied by hydroseeding with a hydroseed slurry containing seed, natural fiber mulch, and organic tackifier. Although hydroseed mulch with seed can be carried and moved by flowing water, the mulch will help more of the seed stay in place and germinate compared to hand seeding.

A unique seed mix was developed for the spinescale scrub habitat occurring in the project impact area. The recommended seed mix and seeding rate for spinescale scrub is outlined in Table 3 (below) and may be modified or species re-placed due to availability of the seed that year and seed costs. Quick-growing, shallow-rooted species will be included in the seed mix to provide short-term erosion control. By providing short-term erosion control, more favorable growing conditions will be created for climax species that will provide long-term erosion control.

Test Plots

In addition, the operator shall establish four 10-square meter test plots. The test plots will be located in the southeastern portion of the site, refer to Sheet 1 of the Mine Plan. The plot areas shall be representative of disturbed slope and pit floor areas with the following treatments: (1) ripping to depth of 1-foot with no seeding; and (2) ripping and covering with available topsoil and seeding. The test plots will be maintained and monitored and tests conducted to refine revegetation techniques and seeding rates.

Table 3
Recommended Seed Mix
Kramer Junction Borrow Pit

Species	Life Form	Pure Live Seed lbs./Acre
<i>Ambrosia dumosa</i> (white bursage)	shrub	1.0
<i>Ambrosia salsola</i> (burrobush)	shrub	0.5
<i>Amsinckia tessellata</i> (bristly fiddleneck)	annual herb	1.0
<i>Atriplex polycarpa</i> (allscale saltbush)	shrub	1.0
<i>Atriplex spinifera</i> (spinescale saltbush)	shrub	2.5
<i>Krascheninnikovia lanta</i> (winterfat)	shrub	0.5
<i>Lasthenia gracilis</i> (needle goldfields)	annual herb	0.5
<i>Sphaeraicea ambigua</i> (Desert mallow)	perennial herb	0.5
<i>Stipa hymenoides</i> (Indian rice grass)	perennial grass	8.0
<i>Stipa speciosa</i> (desert needle grass)	perennial grass	1.0

Source: S&S Seeds, Jericho Systems, DMR - October 2017; revised February 2018 (typical depending on seed availability)

Irrigation

The plant palette proposed for the mine site consists of primarily drought-tolerant plants species that should perform well without additional water. The average precipitation in the area should be sufficient for seed germination and root establishment of native species.

Planting in the fall, prior to the winter rains, will be sufficient for seed germination and root establishment and reduce weed growth that is typically associated with supplemental irrigation. Scarification of the soil and the creation of surface rills and furrows will allow for maximized collection of water from rain events and run-off.

Fertilization

No fertilization of the site is recommended. The native seeds used for revegetation will be tolerant of existing soil conditions. Additionally, the mechanical loosening, and creation of surface rills and furrows, will create conditions favorable for seed germination and root establishment by native species. Widespread use of fertilizers on desert sites appears to benefit non-native weedy species and not the native species sought as the goal of the revegetation plan (Clary, 1987).

Weed Control

The purpose of the non-native invasive species control plan is to reduce or eliminate the occurrence of non-native invasive plant species that may invade the site where active and natural revegetation is taking place. Non-native invasive species (weeds) can compete with native plant species for available moisture and nutrients and consequently interfere with revegetation of the site.

Several non-native plant species were identified on site, including Saharan mustard (*Brassica tournefortii*), foxtail chess (*Bromus madritensis*), cheatgrass (*B. tectorum*), redstem fillaree (*Erodium cicutarium*), Russian thistle (*Salsola paulsenii*) and Mediterranean grass (*Schismus* ssp.). The latter species is prevalent within the herbaceous layer and comprises approximately 40% of the ground cover within the sampled areas.

The occurrence of non-native invasive species on-site after revegetation shall be monitored by visual inspection quarterly for the first year and then annually thereafter. The goal is to prevent non-native invasive species from becoming established and depositing seeds in revegetated areas.

Non-native vegetation will be removed using the most efficient method as determined by the site conditions. Removal may occur regularly in the first year and may consist of using mechanized equipment, hand tools and/or herbicide spraying. Herbicides may be applied to control an instance where there is an aggressive and extensive weed invasion on site. Cover and density of non-native grass species within the revegetation area shall be no greater than the baseline and in comparable surrounding lands that have not been disturbed by the project. For non-native species other than non-native grasses (i.e. Saharan mustard, Russian thistle, etc.), no areas will be allowed to have more than 10 percent non-native invasive species ground cover. Due to the surrounding areas of non-native grasses and wind-blown seeds, it is not achievable to reduce these non-native grasses to 10% levels. However, weed control application of herbicides would reduce non-native grasses.

If inspections reveal that non-native invasive species are becoming or have become established on site, then removal will be initiated. Inspections shall be made in conjunction with revegetation monitoring. Reports of inspections and weed control implementation shall be part of the annual revegetation monitoring and kept on file by the operator.

In addition, the following avoidance, minimization, and mitigation measures are included in the EIS/EIR and will be implemented by the Applicant as required per contract with Caltrans would reduce potential impacts from the introduction of invasive species during construction:

- **BIO-38:** Measures to minimize the introduction or spread of nonnative species would include cleaning all equipment and vehicles with water (or another Caltrans approved method) to remove dirt, seeds, vegetative material, or other debris before entering and upon leaving the project site and the removal and disposal off site of existing nonnative species within the project area.
- **BIO-39:** Landscaping and erosion control measures proposed during this Caltrans project will not contain invasive species in the plant selections or seed mixtures.

Monitoring

The Revegetation Monitoring Plan will be an ongoing effort to assess the results of revegetation on the disturbed areas of the site. The monitoring plan will be followed annually to monitor and assess completed revegetated areas (and test plots) and areas where revegetation is being planned or just beginning. A Revegetation Monitoring Report submitted by the operator to the County

will be part of the overall compliance with conditions. Revegetated areas will be assessed utilizing success criteria with successful methods being implemented for future revegetation.

Revegetation efforts will be monitored annually for five years after seeding or until revegetation meets the success criteria and is self-sustaining. Revegetation observations will be summarized annually as part of the overall-monitoring program. This schedule may be revised depending on the results of the revegetation effort and the meeting of the success criteria. Monitoring and revegetation results will be reported to the County in an annual monitoring report.

Success Criteria

The site consists of salt bush scrub with minimal vegetation. Success criteria will be based on the overall quality of the revegetation results compared to the recorded baseline vegetation data. Following completion of the revegetation, the surviving perennial plant species shall be evaluated annually by the consulting botanist for relative growth as determined by cover, diversity and density. Individual specimens or areas shall receive appropriate remedial attention as necessary. Remedial actions include removing invasive weed species or reseeding. The above procedure will be repeated annually for a total of five years or until success criteria achieved. Successful revegetation based on baseline data and DMR standards will be achieved when the reseeded areas have met the following in Table 4 five years after reclamation.

Table 4
Kramer Junction Borrow Pit
Recommended Revegetation Success Criteria

Mixed Desert Scrub	Baseline Mean	Standard Success Percentage	Success Criteria
Cover (%)	26	40%	11% cover of native perennials
Density	15	70%	10 native perennials/1,000 sq. ft. or 6 native perennials per 50-m x 1-m (50 m ²) transect or 540 sq. ft.
Species Richness or Diversity	5	75%	4 native perennials/1,000 sq. ft. or 50 m ²

Source: Revegetation Plan – Jericho Systems Inc. and DMR comments February 2018 (see Appendix 1)

Revegetation Monitoring

The ongoing revegetation activities will be monitored throughout the life span of the mining operation and will be summarized annually as part of the overall monitoring plan and report. Data on plant species diversity, cover, density, survival and vigor will be collected on revegetated sites and compared qualitatively to undisturbed sites to evaluate success. The operator will seed with the seed mix listed in Table 2 which includes four perennial species.

Per DMR comment, “Data for cover, density, and species richness will be collected along 14 randomly placed 50-meter by 1-meter transects. Cover will be evaluated using the line-intercept method along the 50-meter tape. Density and species richness will be recorded by counting all

native perennials rooted within the belt transect. All values will then be averaged and compared to the performance standards for each criterion.”

All data will be recorded and permanent photo documentation stations will also be established for representative transects in order to visually document annual vegetation changes and community development.

If at any time the revegetation efforts are found unsuccessful as compared to surrounding areas, the botanist will reevaluate the revegetation guidelines and recommend procedures to ensure successful plant propagation. Remedial activities may include but not limited to additional seeding, change of seed mix, removal of invasive non-native species, and additional protection from human and animal impacts as deemed necessary. Monitoring of the revegetation will continue for five years after cessation of mining or until the site is deemed successfully revegetated by the County. These results will be reported to the County of San Bernardino annually.

2.7 CLEANUP

At the completion of mining activities, all equipment will be removed from the project site. All debris will be removed and disposed at a permitted facility. The pond will be allowed to evaporate, the liner will be placed into the pond, and the pond backfilled to grade. All quarry fencing and gates will remain in place to prevent unauthorized access.

2.8 POST RECLAMATION AND FUTURE MINING

The reclaimed site will allow the land owner to re-grade the existing air strips for private use. The reclaimed site will not preclude or necessitate any future mining activities with depth or surface modification. Upon completion of mining activities, the site will be open space/habitat and used as a private air field as it functioned historically. The site will be 25 to 40 feet below the adjacent properties with contoured and revegetated 3H:1V slopes.

2.9 SLOPE AND SLOPE TREATMENT

Stabilization of the mine slopes will be accomplished during the final excavations per area and phase and may include some backfilling of slopes if over-steepened. Slope stabilization will improve the aesthetics of the site; reduce slope erosion; eliminate slope sliding; and eliminate hazards such as un-safe drop-offs.

Final slopes will be excavated at 3H:1V so no backfilling will be required. If some minor fill is required to create final 3H:1V slopes, the fill will be compacted by tracking the dozer over the slope to achieve appropriate compaction consistent with the final end use of open space. Overly compacted final-graded slopes and/or the pit floor may require being loosened by mechanical means to aid the reseeding effort.

Preserved topsoil (as described in Section 2.11 Soils) will be placed over this prepared compacted/loosened surface, with final treatment and subsequent revegetation to follow pursuant

to Section 2.6 Revegetation. Revegetation activities will generally commence in late fall to correspond with the rainy season of the area.

2.10 PONDS, WASTES

The water holding pond on-site will be allowed to evaporate, its liner will be cut and placed within the pond, and the pond backfilled to grade.

Chemicals are not used on-site; no processing occurs on-site. There will be no chemical waste or pollution from the mining operations.

2.11 SOILS

Stantec drilled boreholes on-site for Caltrans (*Soil Survey Investigation Report*, December 2, 2016). The samples indicated that the surface and to depths of 25 feet consisted of silty to clayey sand, light brown to brown; with some fines and clays.

The mine site is generally underlain by recent age alluvium, lake, playa, and terrace deposits made up of weathered rock and sand; unconsolidated and semi-consolidated. All identified topsoil, or at minimum the top 6 inches of surface soils and material, will be graded into stockpiles to preserve as much of the organic material and seeds as practicable. Locations for temporary and more long-term surface material stockpiles are identified on Sheet 1 of the Mine Plan. For 60 acres at 0.5 feet, approximately 48,000 cubic yards would be salvaged.

2.12 DRAINAGE AND EROSION CONTROLS

Post-reclamation drainage on-site will be contained by the resulting shallow basin. Only minor sheet flow may drain into the pit. No defined drainages will be interested by the project site. Refer to Section 1.5 for a description of drainage and erosion controls that will be maintained after termination of mining.

2.13 PUBLIC SAFETY

All equipment and debris will be removed from the site upon project completion. Public access to the site will be restricted by the site perimeter 4-strand wire fence with attached desert tortoise fencing per USFWS protocol and locked access gates during operations and until revegetation is deemed successful. Warning signs with contrasting background lettering will be installed every 250 feet along the approved surface mine boundary shall be installed and shall read “No Trespassing - Keep Out; Surface Mining Operation” or similar during mining. Signs will be approximately 1-foot high and 2 feet wide.

The reclaimed 3H:1V slopes will be of sufficient low gradient as not to cause a hazard to public safety if the public illegally trespasses onto the site.

2.14 MONITORING AND MAINTENANCE

The County as lead agency to implement SMARA requires annual reporting of Mining and Reclamation activities. The reports are filed with the State Division of Mine Reclamation and the County. Revegetated areas will be monitored over a five-year period or until success criteria achieved following initial planting. Data on plant species diversity, cover, survival and vigor will be collected on revegetated sites and compared to baseline data from undisturbed sites to evaluate project success.

Monitoring and maintenance of reclamation is an ongoing responsibility of the applicant and if accepted, by the land owner.

Ongoing operations and reclamation activities require monitoring and maintenance as applicable. The operator will provide onsite review of the following among others:

- a. Storm Water Pollution Prevention per the NPDES plan and SWPPP required by State and Federal rules and per Caltrans contract as discussed under Section 1.5 above. Erosion control will be reviewed and addressed within the SWPPP.
- b. Implementation and effectiveness of dust control measures;
- c. Maintenance and managing idling for trucking operations;
- d. Inspection of fencing and signs; and
- e. Test revegetation plots.

2.15 RECLAMATION ASSURANCE

The applicant through a lease with the property owner shall post or cause to be posted reclamation assurance in an amount sufficient to pay for the cost of reclamation as outlined in Section 2. The reclamation assurance shall be reviewed by the Lead Agency annually as required by the Surface Mining and Reclamation Act (SMARA). San Bernardino County is the lead agency for SMARA compliance and will review the Reclamation Assurance and inspect the mine site annually.

In addition to the monitoring through inspections and reporting, the operator is required to assure reclamation of the site in accordance to the approved Reclamation Plan in compliance with Section 2773.1 of SMARA. The operator shall continue to post reclamation assurance mechanisms in an amount sufficient to pay for the cost of reclamation as outlined in Section 2. The financial assurances must be approved by and payable to the County and the California Department of Conservation.

3.0 GEOLOGY

Kramer Junction area is located approximately 30 miles north of the city of Adelanto in the Mojave Desert. The Mojave Desert province is characterized by an interior region of isolated mountain ranges separated by expanses of desert plains. In general, the province has an interior enclosed drainage and many playas. Two important fault trends control topography in the Mojave province, one being a prominent northwest/southeast trend and the other a secondary east-west trend. The Study Area is generally underlain by recent age alluvium, lake, playa, and terrace deposits made up of weathered rock and sand; unconsolidated and semi-consolidated.

The Study Area, as is most of Southern California, is located in a seismically active area. According to the DMG Preliminary Fault Activity Map of San Bernardino, the nearest recently active faults include the Kramer Junction Area Faults and South Lockhart Fault (CDMG, 1994). The Study Area is not located within an Alquist Priolo Special Studies Zone (A-P Zone). The nearest A-P Zone is for the South Lockhart Fault which intersects SR-58 approximately 7 miles east of the Kramer Junction intersection (CDMG, 2000). These and other faults are capable of generating significant seismic events (greater than 5.0 magnitude).

The project site does not fall within a Geological Hazard Zone, as identified on the San Bernardino County General Plan Map Atlas, overlay map, CHDHC. There are no geologic conditions that could adversely affect this project.

4.0 HYDROLOGY

Surface Hydrology

The project area is within the Mojave hydrologic basin of the Antelope-Fremont Valleys and Coyote-Cuddeback Lakes watersheds. The overall Mojave hydrologic basin, which has a surface area of approximately 4,500 square miles, is located entirely within the County of San Bernardino. The Mojave River, located approximately 15 miles southeast of the project site, is the nearest major watercourse. Most of the Mojave River is subterranean, but flows breach the surface between the cities of Barstow and Victorville.

The site is relatively flat with a slight gradient to the north-northwest to a low playa or drainage area with a slight gradient to the west towards Boron and Rogers Dry Lake. No drainages are intersected by the proposed excavation area.

Groundwater

Groundwater is anticipated to flow northwest and west generally mimicking surface topography. The EIR/EIS reports groundwater at depths greater than 150 feet below ground surface (bgs). The Antelope Valley and Harper Valley groundwater basins underlie the project area.

According to the GeoTracker website (Stantec report), depth to groundwater is reported to be approximately 70 feet below the ground surface (bgs) in wells located near the area of Kramer Junction (DWR, 2016a) with a historical high groundwater elevation reported at 64.5 feet bgs in 2012 (DWR, 2016b). The proposed project site is to be excavated to an average depth of 25 to 40 feet, which is not anticipated to impact the water table. Water used for dust suppression on site will be pumped from an on-site well. Water usage for dust suppression is not expected to have an impact or potential to increase siltation on the project site as most will evaporate.

REFERENCES

California Department of Conservation, Division of Mine Reclamation. *Surface Mining and Reclamation Act of 1975* (SMARA, Public Resources Code, Sections 2710-2796). May 2017.

California Department of Transportation. *Final Environmental Impact Report/Environmental Impact Statement State Route 58 Kramer Junction Expressway Project* (SCH#2007051051); Volumes I and II. July 2014.

California Department of Transportation. *Appendix G – Mitigation Measures*; Final Environmental Impact Report/Environmental Impact Statement State Route 58 Kramer Junction Expressway Project (SCH#2007051051). July 2014.

California Department of Transportation. *NEPA/CEQA Re-Validation Form for Final Environmental Impact Report/Environmental Impact Statement State Route 58 Kramer Junction Expressway Project*. August 2017.

California Department of Transportation, District 8; Stantec. *Soil Survey Investigation Report, Task Order No. 34; Soil Survey for 4 Parcels*. Location: 08-SBD-58-PM R0.0/R12.9 San Bernardino County, California. December 2, 2016

California State Water Resources Control Board - GeoTracker website.
<https://geotracker.waterboards.ca.gov/>

County of San Bernardino 2007 Development Code, amended September 23, 2016. Chapter 88.03 Surface Mining and Land Reclamation.

County of San Bernardino 2007 General Plan, amended April 24, 2014.
<http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf>.

Jericho Systems, INC. *Revegetation Plan for the Kramer Junction Borrow Pit*. October 2017.

U.S. Fish and Wildlife Service. *Biological Opinion for State Route 58 Kramer Junction Expressway Project, Kern and San Bernardino Counties, California* (FWS-SB/KRN-12B0203-14F0423). June 30, 2014.

U.S. Fish and Wildlife Service. *Amendment to the Biological Opinion (FWS-SBR-12B0203-17TA0886) for the Kramer Junction Expressway Project* (FWS-SB/KRN-12B0203-14F0423). June 14, 2017.

CROSS REFERENCE MATRIX

Kramer Junction Borrow Pit Mine Reclamation Plan Surface Mining and Reclamation Act of 1975 (SMARA) & California Code of Regulations (CCR Title 14)

Prepared by Lilburn Corporation – December 2017

Including reference to:

ARTICLE 1. GENERAL PROVISIONS. SECTION 2710 et seq.

ARTICLE 2. DEFINITIONS. SECTION 2725 et seq.

ARTICLE 3. DISTRICT COMMITTEES. SECTION 2740 – 2741

ARTICLE 4. STATE POLICY FOR THE RECLAMATION OF MINED LANDS. SECTION 2755 et seq.

ARTICLE 5. RECLAMATION PLANS AND THE CONDUCT OF SURFACE MINING OPERATIONS.
SECTION 2770 et seq., as amended

CCR TITLE 14 (REGISTER 85, No. 18-5-4-83)

CHAPTER 8. MINING AND GEOLOGY

SUBCHAPTER 1. STATE MINING AND GEOLOGY BOARD

ARTICLE 1. SURFACE MINING AND RECLAMATION PRACTICE. SECTION 3500 et seq.

ARTICLE 9. RECLAMATION STANDARDS. SECTION 3700 et seq.

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
SMARA 2770.5	100-year flood, Caltrans contact	X		
SMARA 2772 (c) (1)	Name and Address of operator/agent.		2	1.0
SMARA 2772 (c) (2)	Quantity & type of minerals to be mined.		1, 7	1.0, 1.1
SMARA 2772 (c) (3)	Initiation and termination date.		2	1.0
SMARA 2772 (c) (4)	Maximum anticipated depth of mining.		5, 23	1.1, 2.8, 2.9
SMARA 2772 (c) (5)	Description, including map with boundaries, topographic details, geology, streams, roads, utilities.		1 – 9 Sheets 1 & 2	1.0 - 1.6
SMARA 2772 (c) (6)	Mining plan and time schedule for reclamation (concurrent or phased reclamation).		1- 7, 16	1.0, 1.1, 2.5
SMARA 2772 (c) (7)	Proposed subsequent use.		23	2.8
SMARA 2772 (c) (8)	Description of reclamation measures adequate for proposed end use.		16 -23	2.5 -2.7

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
SMARA 2772 (c) (8) (a)	Description of containment control and mine waste disposal.		8	1.2
SMARA 2772 (c) (8) (b)	Rehabilitation of stream banks/beds to minimize erosion	X	---	
SMARA 2772 (c) (9)	Impact of reclamation on future mining.		23	2.8
SMARA 2772 (c) (10)	Applicant statement accepting responsibility for reclamation per the reclamation plan.		Attached to application	
SMARA 2773 (a)	Water quality monitoring plan specific to property.		8, 24 SWPPP to be prepared upon approval	1.5, 2.12
SMARA 2773 (a)	Sediment and erosion control monitoring plan specific to property.		8, 24 SWPPP to be prepared upon approval	1.5, 2.12
SMARA 2773 (a)	Revegetation plan specific to property. Monitoring Plan.		18-23	2.6
SMARA 2773.1	Performance (financial) assurances.		Draft attached to application	
SMARA 2777	Amended reclamation plans required prior to substantial deviations to approved plans.	X	INFORMATIONAL	
CCR 3502 (b) (1)	Environmental setting and impact of reclamation on surrounding land uses. (Identify sensitive species, wildlife habitat, sensitive natural communities, e.g., wetlands, riparian zones, etc.).		10-16	2.1 – 2.5
CCR 3502 (b) (2)	Public health and safety (exposure).		24	2.13
CCR 3502 (b) (3)	Slopes: critical gradient, consider physical properties and landscaping.		5, 23	1.1, 2.9
CCR 3502 (b) (4)	Fill materials in conformance with current engineering practice.	X	---	

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3502 (b) (5)	Disposition of old equipment		23	2.7
CCR 3502 (b) (6)	Temporary stream and water diversions shown.	X	---	
CCR 3503 (a) (1)	Removal of vegetation and overburden preceding mining kept to a minimum.		16 -22	2.5, 2.6
CCR 3503 (a) (2)	Overburden stockpiles managed to minimize water and wind erosion.	X	---	
CCR 3503 (a) (3)	Erosion control facilities (dikes, ditches, etc.) as necessary.		8, 24	1.5, 2.12
CCR 3503 (b) (1)	Settling ponds (sedimentation and water quality).	X		
CCR 3503 (b) (2)	Prevent siltation of groundwater recharge areas.	X		
CCR 3503 (c)	Protection of fish and wildlife habitat (all reasonable measures).		10- 15	2.3, 2.4
CCR 3503 (d)	Disposal of mine waste and overburden (stable-no natural drainage restrictions without suitable provisions for diversion).	X	---	
CCR 3503 (e)	Erosion and drainage (grading to drain to natural courses or interior basins).		8, 24	1.5, 2.12
CCR 3503 (f)	Resoiling (fine material on top plus mulches).		18-19, 24	2.6, 2.11
CCR 3503 (g)	Revegetation and plant survival (use available research).		18-22	2.6
CCR 3703 (a)	Sensitive species conserved or mitigated		10-12	2.3
CCR 3703 (b)	Wildlife habitat at least as good as pre-project, if approved end use is habitat.		18-22	2.6
CCR 3703 (c)	Wetlands avoided or mitigated at 1:1 minimum	X		

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3704 (a)	For urban use, fill compacted in accordance with UBC or local grading ordinance.	X		
CCR 3704 (b)	For resource conservation, compare to standard for that end use	X		
CCR 3704 (c)	Mine waste stockpiled to facilitate phased reclamation and separate from growth media.	X		
CCR 3704 (d)	Final reclamation fill slopes not exceed 2:1, except when engineering and revegetation analysis allow.	X		
CCR 3704 (e)	Final landforms or fills conform with surrounding topography or end use.		16, 23	2.5, 2.9
CCR 3704 (f)	Cut slopes have minimum factor of safety for end use and conform with surrounding topography.		16, 23	2.5, 2.9
CCR 3704 (g)	Piles or dumps not placed in wetlands without mitigation.	X		
CCR 3705 (a)	Vegetative cover, suitable to end use, self-sustaining. Baseline studies documenting cover, density and species richness.		18-22; Table 4	2.6; Appendix 1
CCR 3705 (b)	Test plots if success has not been proven previously		20	2.6
CCR 3705 (c)	Decompaction of site.		16, 18	2.5, 2.6
CCR 3705 (d)	Roads stripped of road base materials, resoiled and revegetated, unless exempted.		16, 19	2.5, 2.6
CCR 3705 (e)	Soil altered or other than native topsoil, required soil analysis. Amend if necessary.	X		
CCR 3705 (f)	Temporary access not bladed. Barriers installed.	X		

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3705 (g)	Use native plant species, unless exotic species meet end use.		18-19	2.6
CCR 3705 (h)	Plant during correct season.		16, 19	2.5, 2.6
CCR 3705 (i)	Erosion control and irrigation, when necessary.		8, 24	1.5, 2.12
CCR 3705 (j)	If irrigated, demonstrate self-sustaining without for two-year minimum.	X		
CCR 3705 (k)	Weeds managed.		20-21	2.6
CCR 3705 (l)	Plant protection measures, fencing, caging.	X		
CCR 3705 (m)	Success quantified by cover, density and species-richness. Standards proposed in plan. Sample method set forth in plan and sample size provides 80 percent confidence level, as minimum.		21-22; Table 4	2.6
CCR 3706 (a)	Mining and reclamation to protect downstream beneficial uses.	X		
CCR 3706 (b)	Water quality, recharge, and groundwater storage shall not be diminished, except as allowed by plan.	X		
CCR 3706 (c)	Erosion and sedimentation controlled during all phases as per RWQCB/SWRCB.		8, 24	1.5, 2.12
CCR 3706 (d)	Surface runoff and drainage controlled and methods designed for not less than 20 year/1 hour intensity storm event.		8, 24	1.5, 2.12
CCR 3706 (e)	Altered drainages shall not cause increased erosion or sedimentation.	X	---	
CCR 3706 (f)	Stream diversions constructed in accordance with DFG 1603, EPA 404, Sec. 10 Rivers and Harbors.	X	---	

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3706 (g)	All temporary diversions eventually removed.	X	---	
CCR 3707 (a)	Return prime ag to prime ag, unless exempted.	X	---	
CCR 3707 (b)	Segregate and replace topsoil by horizon.	X	---	
CCR 3707 (c)	Productivity rates equal pre-project or similar site for two consecutive years. Rates set forth in plan.	X	---	
CCR 3707 (d)	Fertilizers and amendments not contaminate water.	X	---	
CCR 3708	Other ag capable of sustaining crops of area.	X	---	
CCR 3709 (a)	Equipment stored in designated area and waste disposed of according to ordinance.		8	1.2
CCR 3709 (b)	Structures and equipment dismantled and removed.		23	2.7
CCR 3710 (a)	Surface and groundwater protected.		8, 24	1.5, 2.12
CCR 3710 (a)	Surface and groundwater projected in accordance with Porter Cologne and Clean Water Acts (RWQCB/SWRCB).		8, 24	1.5, 2.12
CCR 3710 (b)	In-stream in accordance with CFG 1600, EPA 404, and Sec. 10 Rivers and Harbors.	X		
CCR 3710 (c)	In-stream channel elevations and bank erosion evaluated annually using extraction quantities, cross-sections, and aerial photos.	X		
CCR 3710 (d)	In-stream mining activities shall not cause fish to become entrapped in pools or in off-channel pits. California Fish and Game Code section 1600.	X		

SMARA/CCR SECTION	DESCRIPTION	N/A	PAGE(S)	SECTION(S)
MINING OPERATIONS AND CLOSURE				
CCR 3711(a)	All salvageable topsoil removed. Topsoil and vegetation removal not proceed mining by more than one year.		24	2.11
CCR 3711 (b)	Topsoil resources mapped prior to stripping, location of stockpiles on map. Topsoil and growth media in separate stockpiles.	X		
CCR 3711 (c)	Soil salvage and phases set forth in plan, minimize disturbance, designed to achieve revegetation success.		24	2.11
CCR 3711 (d)	Topsoiling phased ASAP. Stockpiles not to be disturbed until needed. Stockpiles clearly identified and planted with vegetation or otherwise protected.		24	2.11
CCR 3711 (e)	Topsoil redistributed in stable site and consistent thickness.		16, 18, 24	2.5, 2.6, 2.11
CCR 3712	Waste and tailings, and waste disposal governed by SWRCB (Article 7, Chapter 15, Title 23, CCR).		8	1.2
CCR 3713 (a)	Drill holes, water wells, monitoring wells abandoned in accordance with laws.	X	---	
CCR 3713 (b)	All portals, shafts, tunnels, or openings, gated or protected from public entry, but preserve access for wildlife.	X	---	

APPENDIX 1

REVEGETATION PLAN

JERICO SYSTEMS

OCTOBER 2017

(REVISED PER DMR COMMENTS

FEBRUARY 2018)

Revegetation Plan For the SR-58 Kramer Junction Expressway Project Kramer Junction Borrow Pit

Unincorporated Area East of Boron and West of Kramer Junction
San Bernardino County, California

Prepared for:

Lilburn Corporation
Attn: Martin Derus
1905 Business Center Drive
San Bernardino, CA 92408

Prepared October 2017 (revised per DMR Comments February 2018)

Prepared by:



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Certification

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Contact: Shay Lawrey, President and Ecologist/Regulatory Specialist

Certification: I hereby certify that the statements furnished herein, and in the attached exhibits present data and information required for this Biological Resources Report to the best of my ability, and the facts, statements, and information presented are true and correct to the best of my knowledge and belief. This report was prepared in accordance with professional requirements and standards. Fieldwork conducted for this assessment was performed by me. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project proponent and that I have no financial interest in the project.

A handwritten signature in black ink, appearing to read "Shay Lawrey". The signature is fluid and cursive, with the first and last names being more prominent.

Shay Lawrey, Ecologist/Regulatory Specialist

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1 Introduction

This Revegetation Plan is designed to meet the Surface Mining and Reclamation Act (SMARA) performance guidelines for revegetation (Article 9, Section 3709) and soil salvage (Article 9, Section 3711) for the proposed Kramer Junction Borrow Pit Project (project). The borrow pit will be the source for up to 3 million cubic yards (cy) of material for the State Route 58 (SR-58) Kramer Junction Expressway Project. Reclamation of the site will commence immediately upon termination of mining. The proposed project area is approximately 63.75 acres of which 6.75 acres are currently disturbed and 57 acres are undisturbed. The 63.75-acre site is situated on an approximately 100-acre parcel (APN #: 0498-323-47) owned by Kramer Services and leased by Kiewit Infrastructure West Co. The goal of the revegetation program is to establish the guidelines to monitor, maintain, and assess the results of the completed revegetation program through comparison to the established baseline data and recommended success criteria.

1.1 Project Location

The proposed project site is located approximately 2 miles east of the SR-58 and Boron interchange and 1 mile east of the Kern County border. The privately-held 100-acre parcel (APN #: 0498-23-47) is within the west part of San Bernardino County and depicted on the SW $\frac{1}{4}$ of the U. S. Geological Survey's (USGS) *Saddleback Mountain* 7.5-minute Quadrangle Map in the SW $\frac{1}{4}$ of Section 34, Township 11 North, Range 7 West, San Bernardino Base Meridian (Figures 1&2). Access to the site will be from the existing SR-58 highway about 1/3 mile north on Castle Road. The mined material will be transported to the new SR-58 alignment approximately 630 feet north of the project site via a Caltrans right-of-way. The site has three 60-foot wide private landing strips that run diagonally across the site which is known as the Boron Air Field. The remainder of the project site is vacant open desert land.

1.2 Project Description

The California Department of Transportation (Caltrans) is realigning and widening to four lanes approximately 13 miles of SR-58 from the Kern County line east to about 7.5 miles east of Kramer Junction. The SR-58 Kramer Junction Expressway Project also includes a partial cloverleaf at the SR-58 and US-395 junction and railroad grade separation alleviating existing traffic issues. This project, also known as the Kramer Junction Gap Closure Project, is being constructed as a joint project by Caltrans and the Federal Highway Administration (FHWA) tentatively starting in late 2017 and completed by the end of the year 2020. Kiewit Infrastructure West Co. is proposing to utilize approximately 63.75 acres of the 100-acre parcel for the removal of up to 3 million cy for a mining period of three years. Mined products will include landscape and general fill material for the SR-58 Kramer Junction Expressway Project.

Caltrans included the proposed project site defined by Caltrans as Area 2 Borrow Area, in their project design and environmental review. Caltrans concluded in their National Environmental Policy Act/Californian Environmental Quality Act (NEPA/CEQA) Re-Validation Form (August 8, 2017) that the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for SR-58 Kramer Junction Expressway Project (July 1, 2014) remains valid with implementation of project design and mitigation measures for the potential impacts of the Kramer Junction Borrow Pit area.

The borrow pit site is currently vacant with the three unpaved air strips and consists of *Atriplex spinifera* Shrubland Alliance (spinescale scrub) habitat. The adjacent properties are vacant to the west, north, and east. The owner's residence lies to the southwest and two other residences are located 600 to 1,000 feet to the south. The existing SR-58 Highway lies to the west and south and the new alignment is aligned west to east to the north.

2 Environmental Setting

The general project vicinity consists primarily of open space and scattered private residences. The project site is in the Boron area of the western Mojave Desert, situated between the Transverse Mountain Ranges and the southern end of the Sierra Nevada Mountains, south of the Rand and Lava Mountain ranges and northwest of the Mojave River in San Bernardino County, California. The Boron area is subject to both seasonal and annual variations in temperature and precipitation. Average annual maximum temperatures typically peak at 98 degrees Fahrenheit (° F) in July, and fall to an average annual minimum temperature of 36° F in January. Average annual precipitation is greatest from November through March and reaches a peak in February (1.32 inches). Precipitation is lowest in the month of June (0.03 inches). Annual precipitation averages 6.41 inches. The topography of the project area is very flat and the elevation within the project site ranges from approximately 2,484 feet above mean sea level (amsl) at the northwest corner of the site to 2,500 feet amsl along the southern boundary of the site.

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) Web Soil Survey was accessed to determine what soil type(s) occur within the proposed project area. The project site is within an area for which no digital data is available. However, per the NRCS Web Soil Survey report, the surrounding mapped areas are dominated by the following four soil types:

- Cajon-Norob complex, 2 to 9 percent slopes – Cajon Family (2 to 9 percent slope) soils are comprised of loamy sand, from aeolian deposits derived from granite. This soil type is typical of sand sheets, is somewhat excessively-drained with a high to very high runoff class and is not considered a hydric soil. Norob Family (2 to 9 percent slope) soils are comprised of sandy loam, loam, clay loam, sandy clay loam and stratified gravelly loamy sand to sandy clay loam, from aeolian deposits derived from granite. This soil type is typical of alluvial flats, is moderately well-drained with a moderately low to moderately high runoff class and is not considered a hydric soil.
- Cajon loamy sand, 0 to 5 percent slopes – Cajon loamy sand (0 to 5 percent slope) soils are comprised of loamy sand to gravelly loamy sand, from alluvium derived from granite. This soil type is typical of alluvial fans and flood plains, is somewhat excessively-drained with a high to very high runoff class and is not considered a hydric soil.
- Norob-Neuralia complex, 0 to 5 percent slopes – Norob Family (0 to 5 percent slope) soils are comprised of sand, sandy clay loam, sandy clay loam and gravelly sandy loam, from alluvium derived from mixed sources. This soil type is typical of alluvial fans and flood plains, is moderately well-drained with a moderately low to moderately high runoff class and is not considered a hydric soil. Neuralia Family (0 to 5 percent slope) soils are comprised of sandy loam, sandy clay loam and stratified gravelly loamy sand to gravelly sandy clay loam, from alluvium derived from granite. This soil type is typical of alluvial fans and flood plains, is well-drained with a moderately high runoff class and is not considered a hydric soil.
- Neuralia sandy loam, 2 to 5 percent slopes – Neuralia sandy loam (2 to 5 percent slope) soils are comprised of sandy loam, sandy clay loam and stratified gravelly loamy sand to gravelly sandy clay loam, from alluvium derived from granite. This soil type is typical of alluvial fans and flood plains, is well-drained with a moderately high runoff class and is not considered a hydric soil.

Based on aerial imagery and field observations, the soils within the project area appear similar to those identified by the NRCS Web Soil Survey in the surrounding area. Therefore, the soils within the project area likely consist of some combination of these four soil types.

2.1 Existing Vegetation

The baseline inventory of flora was conducted on September 15, 2017 by Jericho Systems, Inc. The survey was conducted to provide data upon which to base the revegetation plan of the proposed Borrow Pit site, and the success criteria for the site.

One homogeneous vegetation community was identified on site: *Atriplex spinifera* Shrubland Alliance (spinescale scrub). This habitat type occurs throughout the proposed project impact area and is typical of desert alluvial fans and old lake beds perched above current drainages (Sawyer et al., 2009). This habitat type is associated with soils that are moderately sandy clay loams to fine, silty clays that may be carbonate rich (Sawyer et al., 2009). The spinescale scrub habitat on site is co-dominated by spinescale saltbush (*Atriplex spinifera*) and white bursage (*Ambrosia dumosa*) in the shrub canopy. Please refer to the attached Site Photographs for a representation of conditions on site. A complete list of observed plant species is included as Appendix A. Field data sheets are included as Appendix B.

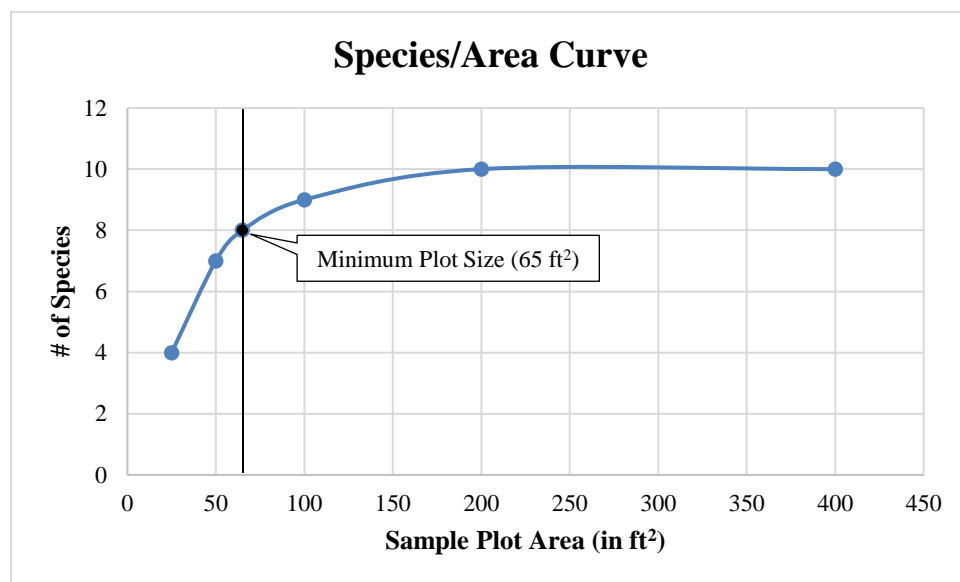
2.2 Method for Collecting Baseline Vegetation

To collect data needed to establish revegetation criteria, two sampling plot sites were randomly chosen (Sample Plot 1 and Sample Plot 2). Sample point locations were recorded on a handheld GPS. To evaluate vegetative cover, a series of nested plots were established, beginning with a 25-square foot (sq ft) area. All species were recorded within this area, then the sample area was enlarged to twice the size (50 sq ft), then to four and eight times the size, etc. All additionally occurring species were recorded separately for each increased subplot. The sample size was increased, doubling in size, until no new species were recorded in the subplot. The total area of Sample Plot 1 was 20 feet by 20 feet (400 sq ft) and the total area of Sample Plot 2 was 40 feet by 80 feet (3,200 sq ft). The overall coverage, density and species diversity were then recorded for each sample plot.

Although the herbaceous layer was sampled and all identified species will be included in the list of species observed on site (Appendix A), the percent (%) cover, density, and species diversity within this layer could not accurately be assessed. Given that the site was sampled in September, many of the annual species were dead and/or absent (i.e blown away) at the time of survey.

SMARA requires that sample sizes be sufficient to produce at least an 80% confidence level. In accordance with the recommendations for standard statistical methods for determining an 80% confidence level, provided in Section 3705 (*Performance Standards for Revegetation*) of the SMARA requirements, the methods described for determining the minimum area of the nested plot sample in D. Mueller-Dombois and H. Ellenberg, 1974, "Aims and Methods of Vegetation Ecology" were used. Per D. Mueller-Dombois and H. Ellenberg, the number of species per area (Species/Area in sq ft) was plotted on a graph (see example below) and the area on the curve containing 80% of the species observed was determined to be the minimum sample size. However, since the sample size was increased, doubling in size, until no new species were recorded in the subplot(s), the actual areas sampled were greater than what was determined to be the minimum sample area.

Example of Method for Determining 80% Confidence Level (Sample Plot 1)



2.2.1 Baseline Survey Results

As previously mentioned, the plant community identified within the sample areas is spinescale scrub, which is co-dominated by spinescale saltbush (*Atriplex spinifera*) and white bursage (*Ambrosia dumosa*) in the shrub canopy. Other shrub species identified within the sample areas include burrobrush (*Ambrosia salsola*), winterfat (*Krascheninnikovia lanata*) and Mojave cottonthorn (*Tetradymia stenolepis*). Additionally, several scattered individuals of allscale saltbush (*Atriplex polycarpa*), Cooper's box thorn (*Lycium cooperi*), Joshua tree (*Yucca brevifolia*) and one individual silver cholla (*Cylindropuntia echinocarpa*) were observed within the proposed Borrow Pit site, but outside the sample areas.

Absolute shrub cover within the sample areas measured approximately 26% (see Table 1 below).

Table 1. % Cover within the Shrub Layer

Species	%Cover
<i>Atriplex spinifera</i>	15
<i>Ambrosia dumosa</i>	10
<i>Tetradymia stenolepis</i>	< 1
<i>Ambrosia salsola</i>	< 1
<i>Krascheninnikovia lanata</i>	< 1
Total	≈ 26

Total shrub density measured 15 shrubs per 1,000 sq ft, or 653.4 shrubs per acre (see Table 2 below); and a total of five (5) shrub species were observed to occur within the sample areas.

Table 2. Shrub Density per 1,000 sq. ft., /acre, and 50 m²

Species	Density/1,000 sq ft	Density/acre	Density/50 m ²
<i>Atriplex spinifera</i>	5.83	254.1	3.13
<i>Ambrosia dumosa</i>	7.22	314.6	3.89
<i>Tetradymia stenolepis</i>	0.28	12.1	0.15
<i>Ambrosia salsola</i>	0.56	24.2	0.30
<i>Krascheninnikovia lanata</i>	1.11	48.4	0.60
Total	15	653.4	8.07

Much of the site appears to have been impacted by historic grazing and there are currently three private airstrips that cross the site, as well as several dirt access roads. Additionally, several non-native plant species were identified on site, including Saharan mustard (*Brassica tournefortii*), foxtail chess (*Bromus madritensis*), cheatgrass (*B. tectorum*), redstem fillaree (*Erodium cicutarium*), Russian thistle (*Salsola paulsenii*) and Mediterranean grass (*Schismus* ssp.). The latter species is prevalent within the herbaceous layer and comprises approximately 40% of the ground cover within the sampled areas.

3 Revegetation

Revegetation of the site upon termination of mining would follow a series of steps. These steps may be modified or changed should new information or techniques that would improve the results of the revegetation activities become available. The proposed borrow pit site would be reclaimed to approximately 63.75 acres of spinescale scrub vegetation (Figure 4). Success criteria and revegetation strategies were designed specifically to meet the needs of the vegetative community and environmental conditions at the site.

3.1 Joshua Tree Relocation

Per Sections 88.01.050(f) and 88.01.060(c) of the County of San Bernardino's Development Code, all Joshua trees that are proposed to be removed will be transplanted or stockpiled for future transplanting wherever possible. As previously discussed, there are several scattered Joshua trees and silver cholla within the 63.75-acre site. Salvaged Joshua trees and cholla shall be transplanted to the nearest feasible areas, within the leased 100-acre parcel, following approved transplant methods for this species as required per contract with Caltrans designated biologists, guidelines and mitigation measure BIO-12 in the EIS/EIR.

3.2 Soil Salvage

The top 12 inches of topsoil shall be salvaged, stockpiled for restoration. Soil salvage activities will occur over approximately 63.75 acres, of which 6.75 acres are currently disturbed (bare ground) and 57 acres are undisturbed (spinescale scrub). Prior to topsoil salvage, any available vegetated soils onsite will be stockpiled in separate identified stockpiles for use as a seed bank during revegetation. The topsoil salvage stockpiles will be kept on site, within the leased 100-acre parcel. Exact locations of the soil stockpiles will be determined prior to clearing/grubbing activities and will be dependent upon grading plans and available space. The soil stockpiles will be clearly marked and stabilized with a breathable erosion control method such as jute netting. If the native seed bank within the removed topsoil is desired for revegetation, then the topsoil should be piled in wide rows that are a maximum of 3 feet high to prevent sterilization of the seed bank during soil storage. If the desired goal is only to retain the developed soil and chemical composition to provide additional soil richness for reseeded, then creating taller, more condensed stockpiles would be appropriate.

3.3 Seed Collection

The goal of seed collection is to preserve the local genetic diversity of the existing plant community while providing seed that is well suited for growth at the site. Seed collection must be undertaken and monitored by a professional seed collecting firm or a qualified botanist. When seed collection is not possible, a certified weed free seed mix may be used in lieu of seed collected at the site. Certified weed free seed mixes are available and may be purchased from professional nurseries.

3.4 Site Preparation

The proposed operation would involve the removal of up to 3 million cy of material. Upon termination of mining activities, the surfaces to be revegetated would be returned to their original land contours, except for the borrow pit slopes. Where possible, revegetation surfaces would be ripped to about 18 to 36 inches in depth to break up compacted areas and would be left in a textured or rough condition with shallow rills and furrows to create optimal conditions for revegetation with a native seed mix. Any available soils will be deposited in a stable, uniform thickness and seeded.

Quick-growing, shallow-rooted species will be included in the seed mix to provide short-term erosion control. By providing short-term erosion control, more favorable growing conditions will be created for climax species that will provide long-term erosion control.

3.5 Irrigation

The plant palette proposed for the mine site consists of primarily drought-tolerant plants species that should perform well without additional water. The average precipitation in the area should be sufficient for seed germination and root establishment of native species.

Planting in the fall, prior to the winter rains, will be sufficient for seed germination and root establishment and reduce weed growth that is typically associated with supplemental irrigation. Scarification of the soil and the creation of surface rills and furrows will allow for maximized collection of water from rain events and run-off.

3.6 Fertilization

No fertilization of the site is recommended. The native seeds used for revegetation will be tolerant of existing soil conditions. Additionally, the mechanical loosening, and creation of surface rills and furrows, will create conditions favorable for seed germination and root establishment by native species. Widespread use of fertilizers on desert sites appears to benefit non-native weedy species and not the native species sought as the goal of the revegetation plan (Clary, 1987).

3.7 Weed Control

The purpose of the non-native invasive species control plan is to reduce or eliminate the occurrence of non-native invasive plant species that may invade the site where active and natural revegetation is taking place. Non-native invasive species (weeds) can compete with native plant species for available moisture and nutrients and consequently interfere with revegetation of the site.

The occurrence of non-native invasive species on-site shall be monitored by visual inspection quarterly for the first year and then annually thereafter. The goal is to prevent non-native invasive species from becoming established and depositing seeds in revegetated areas.

Non-native vegetation will be removed using the most efficient method as determined by the site conditions. Removal may occur regularly in the first year and may consist of using mechanized equipment, hand tools

and/or herbicide spraying. Herbicides may be applied to control an instance where there is an aggressive and extensive weed invasion on site. All non-native, invasive weeds will be removed before they produce seed or reach a height of 8 inches, whichever comes first. Once the weed growth is under control, weeding will take on a more selective approach and be completed with hand tools and such as hoes, shovels and rakes and spraying, if essential to meet success criteria.

As previously discussed, Mediterranean grass (*Schismus* spp.) is prevalent within the herbaceous layer on site, as well as the surrounding areas, and comprised approximately 40% of the ground cover within the sampled areas. Cover and density of non-native grass species within the revegetation area shall be no greater than the baseline and in comparable surrounding lands that have not been disturbed by the project. For non-native species other than non-native grasses (i.e. Saharan mustard, Russian thistle, etc.), no areas will be allowed to have more than 10 percent non-native invasive species ground cover. If inspections reveal that non-native invasive species are becoming or have become established on site, then removal will be initiated. Inspections shall be made in conjunction with revegetation monitoring. Weed control application of herbicides would also reduce non-native grasses.

Reports of inspections and weed control implementation shall be part of the annual revegetation monitoring and kept on file by the operator.

3.8 Seeding Methods and Rates

The revegetation area will be seeded with a certified weed-free seed mix applied hydraulically (hydro-seeded). Seed will be delivered to the site in sealed and labeled packaging, along with a California State Agricultural Code seed certification that includes the supplier's name, geographic location, and collection date, and the tested purity and germination percentage rates. The seed mix will be applied by hydroseeding with a hydroseed slurry containing seed, natural fiber mulch, and organic tackifier. Although hydroseed mulch with seed can be carried and moved by flowing water, the mulch will help more of the seed stay in place and germinate compared to hand seeding.

A unique seed mix was developed for the spinescale scrub habitat occurring in the project impact area. The recommended seed mix and seeding rate for spinescale scrub is outlined in Table 3 (below) and may be modified or species re-placed due to availability of the seed that year and seed costs.

Table 3. Kramer Junction Borrow Pit Recommended Seed Mix and Rates

Species	Life Form	Pure Live Seed Lbs/Acre
<i>Ambrosia dumosa</i> (white bursage)	shrub	1.0
<i>Ambrosia salsola</i> (burrobush)	shrub	0.5
<i>Amsinckia tessellata</i> (bristly fiddleneck)	annual herb	1.0
<i>Atriplex polycarpa</i> (allscale saltbush)	shrub	1.0
<i>Atriplex spinifera</i> (spinescale saltbush)	shrub	2.5
<i>Krascheninnikovia lanta</i> (winterfat)	shrub	0.5
<i>Lasthenia gracilis</i> (needle goldfields)	annual herb	0.5
<i>Sphaeraicea ambigua</i> (Desert mallow)	perennial herb	0.5
<i>Stipa hymenoides</i> (Indian rice grass)	perennial grass	8.0
<i>Stipa speciosa</i> (desert needle grass)	perennial grass	1.0

3.9 Schedule of Revegetation

Seeding of the revegetation area shall occur at the appropriate time of the year and at an application rate for optimum seed sprouting and growth. The ideal window for seeding native plants in Southern California, is in winter generally, between November and February. The contractor will need to coordinate installation efforts with any rain events to ensure that work is not being conducted on the site during periods of inundation.

Following the initial seeding, revegetation areas will be monitored quarterly for the first year and then annually thereafter. Appropriate remediation action such as reseeding and weed removal will be determined at the time of monitoring.

3.10 Test Plots

Per Section 3705 (b) of the SMARA requirements:

“Test plots conducted simultaneously with mining shall be required to determine the most appropriate planting procedures to be followed to ensure successful implementation of the proposed revegetation plan. The lead agency may waive the requirement to conduct test plots when the success of the proposed revegetation plan can be documented from experience with similar species and conditions or by relying on competent professional advice based on experience with the species to be planted.”

The operator shall establish at a minimum, four test plots representative of the slope aspect and floor elevation that will result from the burrow area. Test plots will include surface ripping/no seeding (control plot); surface ripping and seeding as described above with the recommended seed mixture. Additional tests will be conducted if the initial tests and any active revegetation are not successful and may include various types and amounts of seeds and different surface/soil preparation.

4 Revegetation Monitoring

4.1 Success Criteria

Successful revegetation will be achieved when a self-sustaining native plant cover is established in the disturbed area of the proposed project. The revegetated site must resemble and blend into the natural surrounding environment. The success of the revegetation effort will be determined through statistical comparison of the revegetated areas to the baseline inventory.

Acceptable performance standards for mine reclamation are based on a percentage of cover, density, and species diversity when compared with the baseline. An acceptable standard at the Kramer Junction Borrow Pit would measure success at 40% of the baseline cover, 70% of the baseline density, and 75% of the baseline species diversity within the shrub canopy, five years after reclamation. See table below.

Table 4. Kramer Junction Borrow Pit Recommended Revegetation Success Criteria (Per DMR)

Mixed Desert Scrub	Baseline Mean	Standard Success Percentage	Success Criteria
Cover (%)	26	40%	11% cover of native perennials
Density	15	70%	10 native perennials/1,000 sq. ft. or 6 native perennials per 50-m x 1-m

Species Richness or Diversity	5	75%	4 native perennials/1,000 sq. ft. or 50 m ²
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4.2 Technical Assessment

The permanence and sustainability of the revegetated plant community will be determined annually after the initial seeding. Annual assessments of the reclamation area will be conducted by a qualified botanist to determine the success of the revegetation effort. Interim success standards may be used as thresholds for annual monitoring and to ensure the success of revegetation. Although quarterly monitoring will be conducted during the first year the first and annually thereafter, sustainability will be assessment once a year.

The plant species will be evaluated for relative success as determined by the cover, density, and species diversity success criteria. Remedial actions include removing non-native invasive species and reseeding based on annual assessment results. An evaluation of the surviving species will be repeated annually following initial seeding for five years or until the success criteria are achieved.

Per DMR comment, “Data for cover, density, and species richness will be collected along 14 randomly placed 50-meter by 1-meter transects. Cover will be evaluated using the line-intercept method along the 50-meter tape. Density and species richness will be recorded by counting all native perennials rooted within the belt transect. All values will then be averaged and compared to the performance standards for each criterion.”

All data will be recorded on a standard form and copies will be submitted as an appendix to each Annual Report. Photo documentation will also be included for representative transects in order to visually document annual vegetation changes and community development.

4.3 Reporting

The Operator will document the progress of the revegetation effort and submit Annual Maintenance and Monitoring reports to the County of San Bernardino.

5 Conclusion

Upon termination of mining activities, the surfaces to be revegetated would be returned to their original land contours, except for the borrow pit slopes, and revegetation surfaces will be scarified to create conditions optimal for seeding. The revegetation areas will be covered with available surface materials in a stable, uniform thickness and hydro-seeded. Seeding would occur following the first rain of the fall season and before the winter rains.

An acceptable performance standard at the Kramer Junction Borrow Pit would measure success at 40% of the baseline cover, 70% of the baseline density, and 75% of the baseline species diversity, five years after reclamation. The baseline shrub cover within the sample areas measured approximately 26%, the density was approximately 653.4 shrubs per acre and the diversity showed five shrub species. Accordingly, successful revegetation in the spinescale scrub habitat revegetation area would be achieved at 11% cover by native shrub species, an approximate density of 457 shrubs per acre and a species diversity of four shrub species per acre.

An acceptable performance standard relative to the cover and density of non-native grass species within the revegetation area shall be no greater than the baseline (40%) and in comparable surrounding lands that have not been disturbed by the project. For non-native species other than non-native grasses (i.e. Saharan

mustard, Russian thistle, etc.), no areas will be allowed to have more than 10 percent non-native invasive species ground cover.

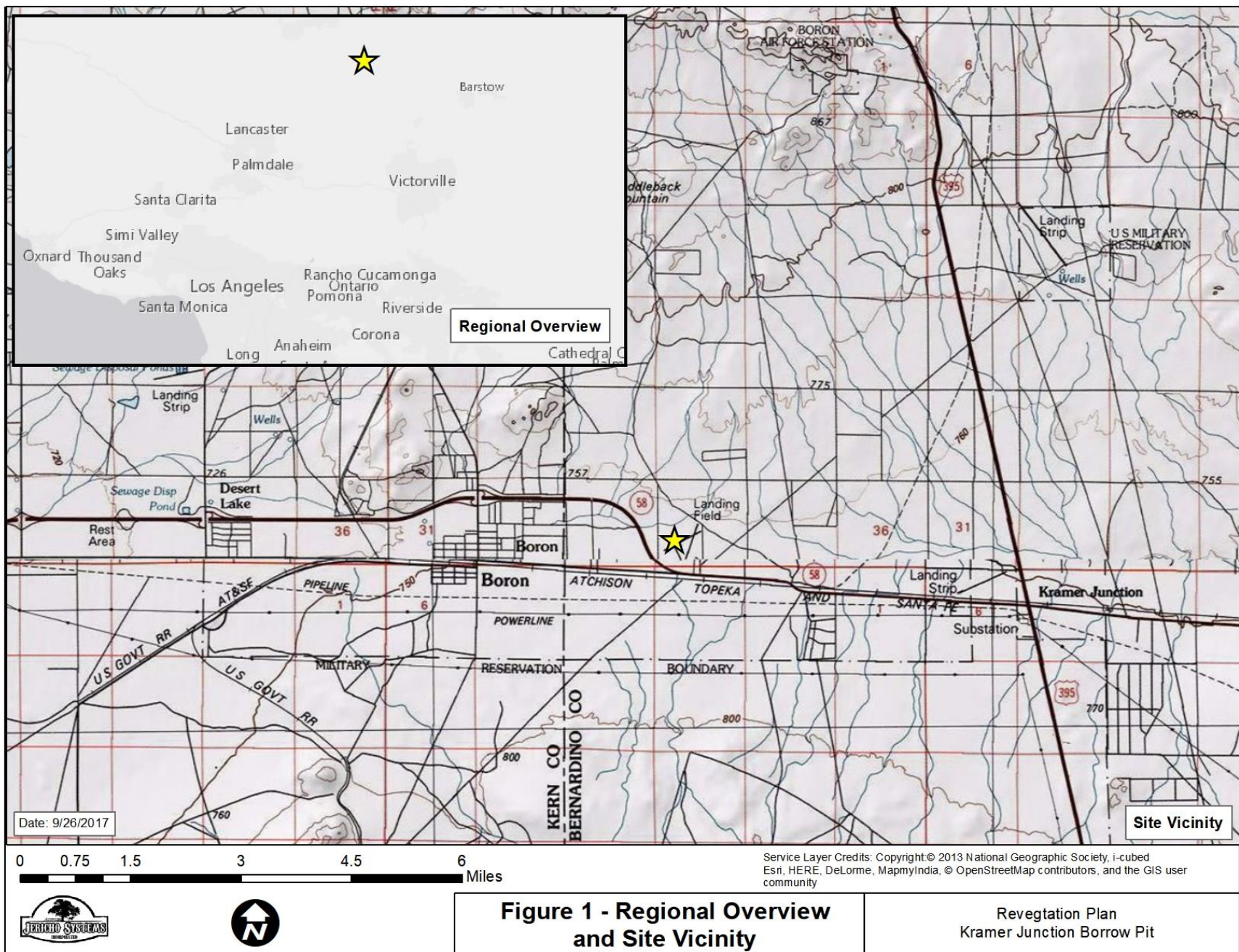
All Joshua trees that cannot be avoided shall be transplanted or stockpiled for future transplanting wherever possible. Salvaged Joshua trees and cholla shall be transplanted to the nearest feasible areas, within the leased 100-acre parcel, following approved transplant methods for this species.

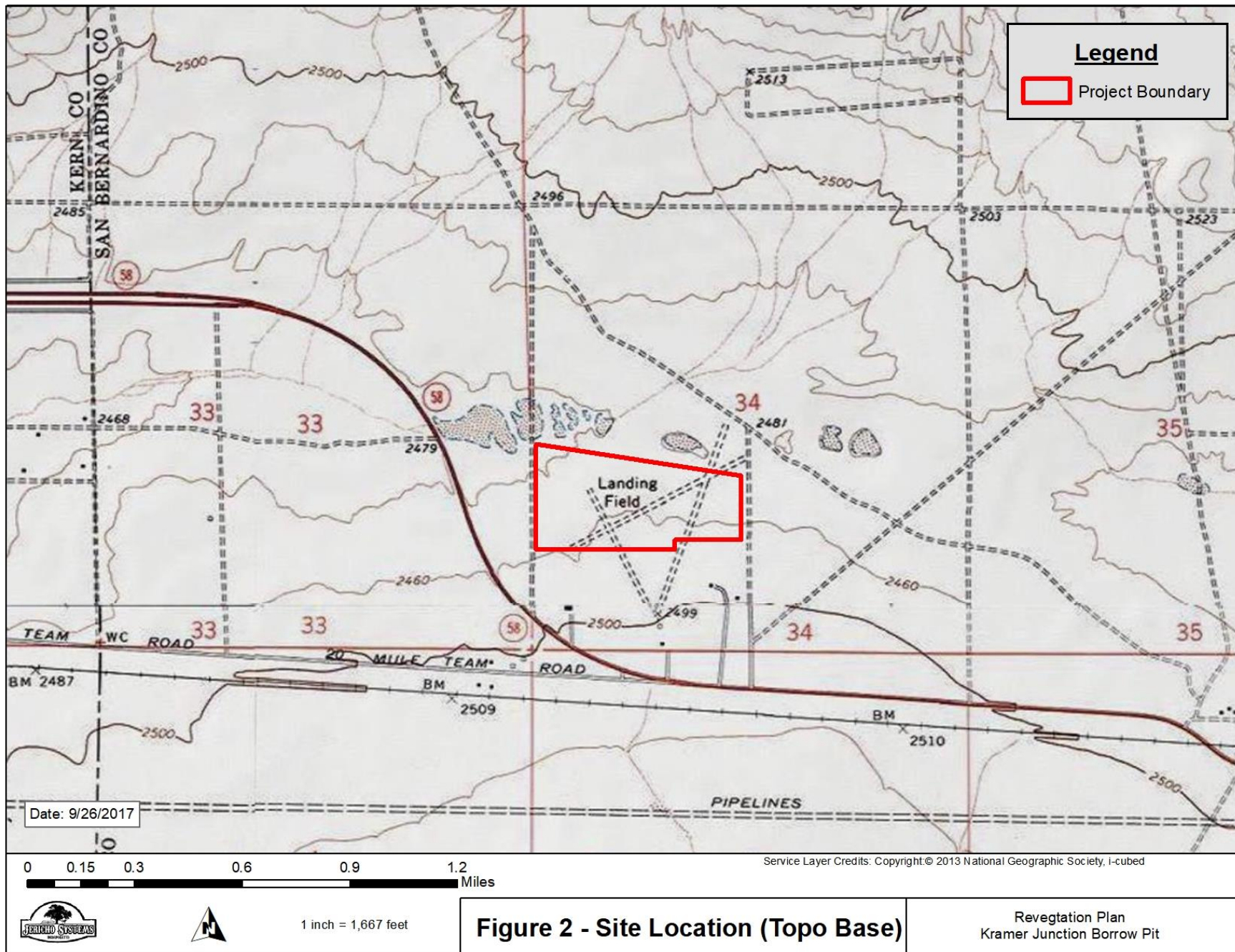
Annual assessments of the reclamation area will be conducted by a revegetation specialist to determine the success of the revegetation effort until said criteria are achieved. Remedial action would occur per the recommendation of the revegetation specialist.

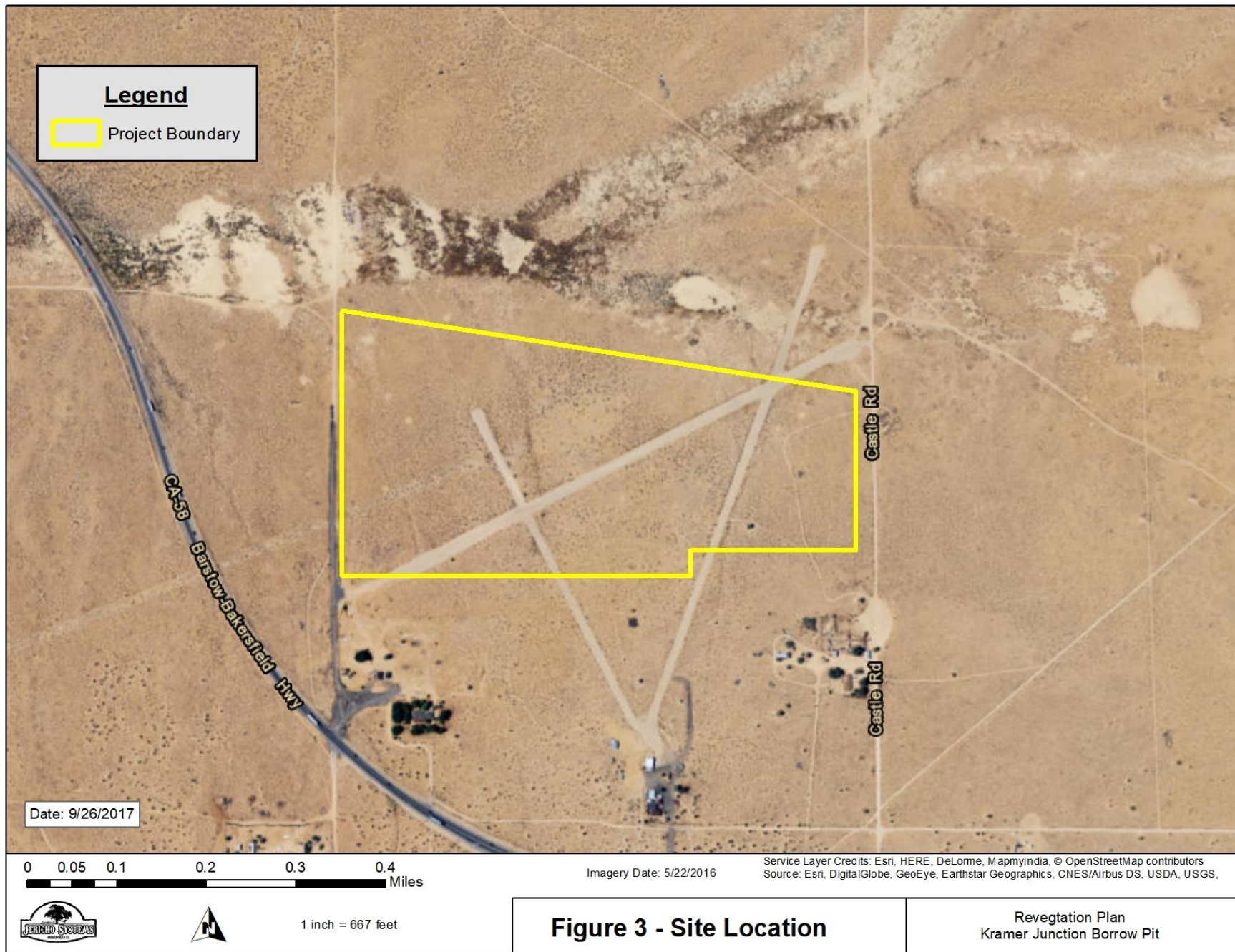
6 References

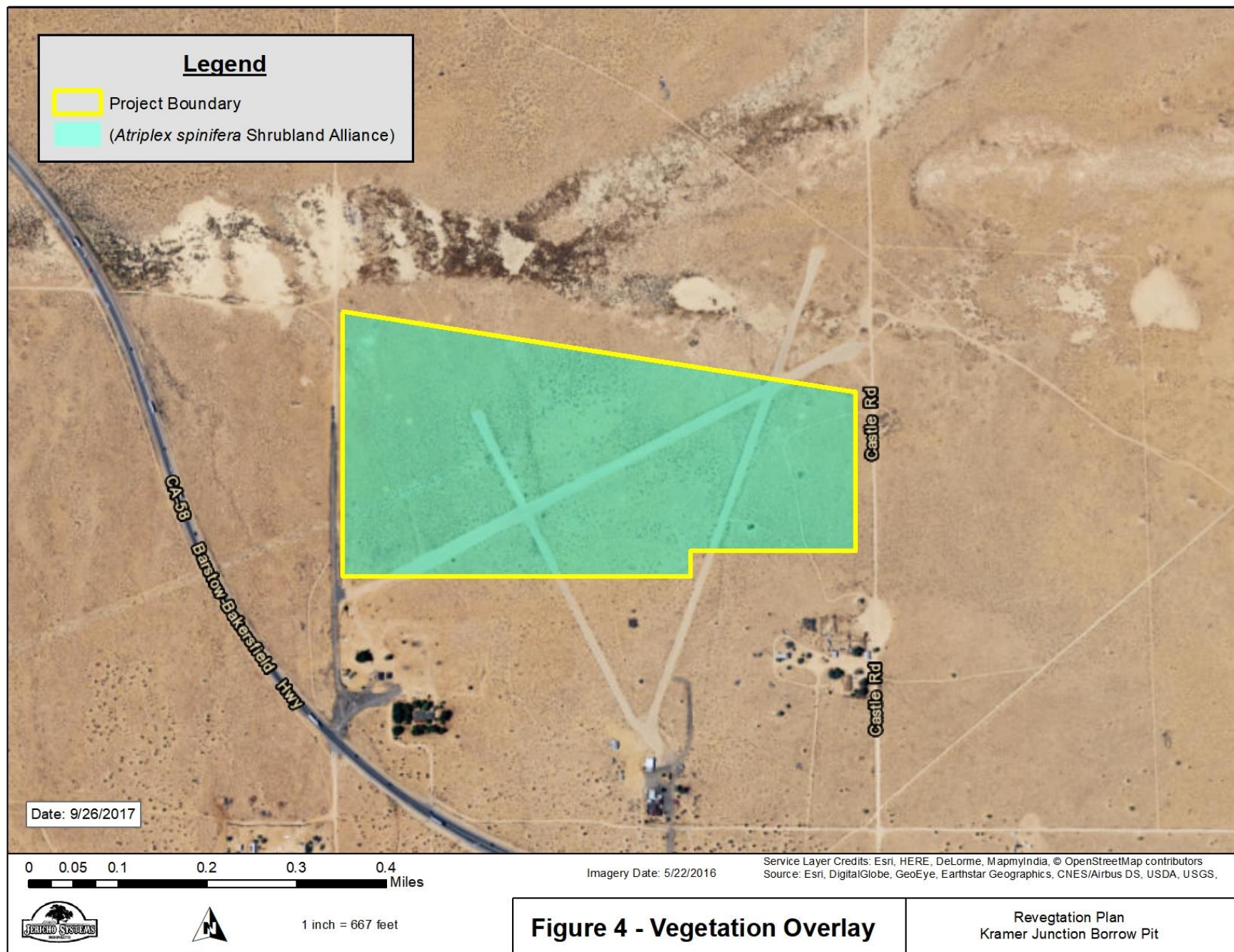
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FIGURES









**SITE
PHOTOGRAPHS**



Photo 1.
Representative
photo of eastern
portion of the
proposed Borrow
Pit site; looking
northeast from
vicinity of Sample
Plot 1.



Photo 2.
Representative
photo of eastern
portion of the
proposed Borrow
Pit site; looking
west from vicinity
of Sample Plot 1.



Photo 3.
Representative
photo of middle
portion of the
proposed Borrow
Pit site; looking
north from vicinity
of Sample Plot 2.



Photo 4.
Representative
photo of middle
portion of the
proposed Borrow
Pit site; looking
west from vicinity
of Sample Plot 2.

Appendix A
Floral Species Observed

List of Plant Species Observed within the Kramer Junction Borrow Pit Site

Scientific Name	Common Name	Life Form
Agavaceae	Century-plant Family	
<i>Yucca brevifolia</i>	Joshua tree	Tree
Asteraceae	Composite Family	
<i>Ambrosia dumosa</i>	White bursage	Shrub
<i>Ambrosia salsola</i>	Burrobush	Shrub
<i>Lasthenia gracilis</i>	Needle goldfields	Annual herb
<i>Tetradymia stenolepis</i>	Mojave cottonthorn	Shrub
Boraginaceae	Borage Family	
<i>Amsinckia tessellata</i> var. <i>tessellata</i>	Bristly fiddleneck	Annual herb
Brassicaceae	Mustard Family	
<i>Brassica tournefortii</i> **	Saharan mustard**	Annual herb
<i>Lepidium flavum</i>	Yellow pepper grass	Annual herb
<i>Lepidium lasiocarpum</i> ssp. <i>lasiocarpum</i>	Shaggyfruit pepperweed	Annual herb
Cactaceae	Cactus Family	
<i>Cylindropuntia echinocarpa</i>	Silver cholla	Shrub (stem succulent)
Chenopodiaceae	Goosefoot Family	
<i>Atriplex polycarpa</i>	allscale saltbush	Shrub
<i>Atriplex spinifera</i>	spinescale saltbush	Shrub
<i>Krascheninnikovia lanata</i>	winter fat	Shrub
<i>Salsola paulsenii</i> **	barbwire russian thistle**	Annual, perennial herb
Geraniaceae	Geranium Family	
<i>Erodium cicutarium</i> **	redstem filaree**	Annual herb
Poaceae	Grass family	
<i>Bromus madritensis</i> *	foxtail chess*	Annual grass

Scientific Name	Common Name	Life Form
<i>Bromus tectorum</i> **	cheatgrass**	Annual grass
<i>Schismus</i> ssp. (<i>arabicus</i> , <i>barbatus</i>)**	Mediterranean grass**	Annual grass
<i>Stipa hymenoides</i>	Indian rice grass	Perennial grass
<i>Stipa speciosa</i>	desert needle grass	Perennial grass
Polemoniaceae	Phlox Family	
<i>Linanthus</i> sp. (<i>bigelovii</i> or <i>dichotomus</i>)	linanthus	Annual herb
Polygonaceae	Buckwheat Family	
<i>Eriogonum gracillimum</i>	rose and white buckwheat	Annual herb
Solanaceae	Potato Family	
<i>Lycium cooperi</i>	Cooper's box thorn	Shrub

*non-native

**invasive

Appendix B
Data Sheets

Nested Plot Vegetative Sampling Data Sheet

Project Name: Kramer Borrow PitSurveyors: Daniel Smith, Bailey Bingham, Gene Jennings, Shannon DyeProject Location: NW of Kramer Junction, West of Castle
Road, N of SR-58; San Bernardino Co., California
N 35 0 12.05, W 117 36 24.68Plant Community(ies): *Atriplex spinifora* Shrubland Alliance; (spinescale scrub)Final Plot Size/Description: 20 x 20 feet (Sample Plot #1)Stratification Information: Shrub Layer < 3 feet; Herb Layer < 20 inchesComments/Site Description: Flat; spinescale scrub. Individual Joshua tree (*Yucca brevifolia*) and silver cholla (*Cylindropuntia echinocarpa*)
observed outside of sample plot area.

Subplot #	Subplot Dimensions/Area (ft)	Total Species	% New Species $\left[\frac{\text{new species}}{\text{total species}} \right]$	% Area Increased $\left[\frac{\text{Area of } n}{\text{Area of } n-1} \right]$
1	5 x 5	4	100	N/A
2	5 x 10	7	43	200
3	10 x 10	9	22	400
4	10 x 20	10	10	800
5	20 x 20	10	0	1600

Nested Plot Vegetative Sampling Species List (Sample Plot 1)

Subplot #	Species Name	Abundance/ Vitality	Strata	Overall Abundance
1	<i>Atriplex spinifera</i>	2/ ●	S ₂	3
1	<i>Shismus</i> sp.	3/ ●	H ₃	3
1	<i>Lepidium lasiocarpum</i>	1	H ₃	1
1	<i>Lasthenia gracilis</i>	1	H ₃	2
2	<i>Erodium cicutarium</i>	2/ ●	H ₃	2
2	<i>Brassica tournefortii</i>	+	H ₂	+
2	<i>Eriogonum gracillimum</i>	+	H ₂	+
3	<i>Linanthus</i> sp.	r	H ₃	r
3	<i>Lepidium flavum</i>	1	H ₃	1
4	Unidentified Asteraceae	+	H ₃	+
5	No new species	-	-	-

Abundance Scale: **5**—covers more than ¾ of the plot **4**—covers ½ to ¾ of the plot **3**—¼ to ½ the plot **2**— ⅒ to ¼ the plot **1**—Numerous, but less than ⅒ cover, or scattered with cover up to ⅒ **+**—Few, with little cover **r**—Solitary

Vitality Scale: ●—Exceptionally vigorous ○ Feeble ○○ Very feeble; never fruiting

Strata Scale: **T**— >5m **S₁**— 2-5m **S₂**—2m-50cm **H₁**—50cm-30cm **H₂**—30cm-10 cm **H₃**— <10cm

Nested Plot Vegetative Sampling Data Sheet

Project Name: Kramer Borrow PitSurveyors: Daniel Smith, Bailey Bingham, Gene Jennings, Shannon DyeProject Location: NW of Kramer Junction, West of Castle
Road, N of SR-58; San Bernardino Co., California
N 35 0 8.75, W 117 36 34.13Plant Community(ies): *Atriplex spinifora* Shrubland Alliance; (spinescale scrub)Final Plot Size/Description: 40 x 80 feet (Sample Plot #2)Stratification Information: Shrub Layer < 3 feet; Herb Layer < 20 inchesComments/Site Description: Flat; spinescale scrub. Individual Joshua tree (*Yucca brevifolia*) observed outside of sample plot area.

Subplot #	Subplot Dimensions/Area (ft)	Total Species	% New Species $\left[\frac{\text{new species}}{\text{total species}} \right]$	% Area Increased $\left[\frac{\text{Area of } n}{\text{Area of } n-1} \right]$
1	5 x 5	6	100	N/A
2	5 x 10	8	25	200
3	10 x 10	9	11	400
4	10 x 20	10	10	800
5	20 x 20	11	9	1600
6	20 x 40	11	0	3200
7	40 x 40	16	31	6400
8	40 x 80	16	0	12800

Nested Plot Vegetative Sampling Species List (Sample Plot 2)

Subplot #	Species Name	Abundance/ Vitality	Strata	Overall Abundance
1	<i>Shismus</i> sp.	3/ ●	H ₃	3
1	<i>Atriplex spinifera</i>	3/ ●	S ₂	2
1	<i>Amsinckia tessellata</i>	+	H ₂	2
1	<i>Erodium cicutarium</i>	3/ ●	H ₃	2
1	<i>Brassica tournefortii</i>	r	H ₂	2
1	<i>Lepidium lasiocarpum</i>	r	H ₃	1
2	<i>Eriogonum gracillimum</i>	1	H ₂	+
3	<i>Linanthus</i> sp.	+	H ₃	+
3	<i>Lasthenia gracilis</i>	+	H ₃	+
4	<i>Ambrosia dumosa</i>	3/ ●	S ₂	2
5	<i>Tetradymia stenolepis</i>	r/ ●	S ₂	r
6	No new species	-	-	-
7	<i>Ambrosia salsola</i>	1/ ●	S ₂	+
7	<i>Krascheninnikovia lanata</i>	r	S ₂	+
7	<i>Salsola paulsenii</i>	r/ ●	S ₂	r
7	<i>Bromus tectorum</i>	+	H ₂	+
7	<i>Bromus madritensis</i>	+	H ₂	+
8	No new species	-	-	-

Abundance Scale: 5—covers more than $\frac{3}{4}$ of the plot 4—covers $\frac{1}{2}$ to $\frac{3}{4}$ of the plot 3— $\frac{1}{4}$ to $\frac{1}{2}$ the plot 2— $\frac{1}{20}$ to $\frac{1}{4}$ the plot 1—Numerous, but less than $\frac{1}{20}$ cover, or scattered with cover up to $\frac{1}{20}$ +—Few, with little cover r—Solitary

Vitality Scale: ●—Exceptionally vigorous °—Feeble °°—Very feeble; never fruiting

Strata Scale: T—>5m S₁—2-5m S₂—2m-50cm H₁—50cm-30cm H₂—30cm-10 cm H₃—<10cm

APPENDIX 2

APPENDIX G MITIGATION MEASURES FROM THE FINAL ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT STATE ROUTE 58 KRAMER JUNCTION EXPRESSWAY PROJECT (SCH#2007051051) VOLUMES I AND II JULY 2014

APPENDIX G: Environmental Commitments Record (ECR)

State Route 58 (SR-58)
Kramer Junction Expressway Project
PN: 0800000616
EA 08-347700

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.4 Community Impacts					
CI-1	Caltrans will ensure that direct vehicle access to all businesses and residences from both northbound and southbound directions of US-395 is achieved following construction.	District Design/District Right of Way/Resident Engineer/Contractor	Final Design/Construction		
CI-2	A Construction Management Plan and a Transportation Management Plan (see TR-1) will be prepared for the project and include coordination efforts that will inform the community about project activities, maintain access to and from the project area during construction, minimize construction-period traffic, and control glare, dust, and noise. Measures to minimize construction impacts in these sections also apply to minimizing permanent community cohesion/character impacts.	Resident Engineer/Contractor	Final Design		
CI-3	To address bypass impacts, Caltrans will coordinate with the community and County regarding the possibility of placing a Welcome sign at both ends of the proposed expressway with brief information encouraging visitors to visit services offered at Kramer Junction.	Project Engineer/Design/Resident Engineer/	Design Phase		
CI-4	During Final Design and Construction, every effort will be made to further minimize the amount of right-of-way needed for the facility and to further minimize community and environmental impacts.	Project Engineer/Design/Resident Engineer	Design/Construction		
ECON-1	Sufficient relocation resources will be made available to displaced businesses in accordance with the Uniform Relocation Assistance and Property Acquisition Act to 1970 as amended (42 USC Secs. 4601-4655).	Resident Engineer	Project Approval/Environmental Document		
ECON-2	Businesses displaced by the project alternatives will be relocated in an area that is comparable to the existing location in terms of accessibility and traffic volume.	Resident Engineer/CT Right of Way Agent	Final Design/PS&E		
ECON-3	Signage provisions will be made available to businesses whose temporary or permanent visibility and vehicular access change as a result of the project.	Resident Engineer	Final Design/Construction		

APPENDIX G: Environmental Commitments Record (ECR)

State Route 58 (SR-58)
Kramer Junction Expressway Project
PN: 0800000616
EA 08-347700

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
ECON-4	For APN# 049219104, the permanent replacement site or a reconfiguration on the current site will accommodate the hangars and runway.	Resident Engineer	Final Design/Construction		
Section 3.5 Utilities/Emergency Services					
UT-1	Caltrans will coordinate all utility relocation work with the affected utility companies to ensure minimum disruption to customers in the service areas during construction. If Alternative 2 is selected as the preferred alternative, a coordination plan shall be established with SCE. The coordination plan shall include specific measures to minimize electrical service disruption that would occur with relocation of the existing SCE substation. This coordination plan will be in place and agreed upon by Caltrans and SCE before any relocation activities occur as a result of the proposed project.	Resident Engineer	Final Design/PS&E		
TR-1	Preparation of a Traffic Management Plan (TMP) to ensure that local and regional traffic moves efficiently during construction. The information provided will include access and traffic management plans that describe any projected temporary street closures or expected traffic delays due to construction vehicles on the roadways.	Resident Engineer	Final Design		
TR-2	The TMP and the construction plans will be provided to the community business and local agencies as the fire department, prior to project commencement.	Resident Engineer	Final Design		

APPENDIX G: Environmental Commitments Record (ECR)

State Route 58 (SR-58)
Kramer Junction Expressway Project
PN: 0800000616
EA 08-347700

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
Section 3.6. Traffic and Transportation/Pedestrian and Bicycle Facilities					
TR-1	<p>Caltrans will prepare a TMP to ensure that local and regional traffic moves efficiently during construction. The TMP and the construction plans will be provided to community agencies, such as the fire department, prior to project commencement. The information provided will include access and traffic management plans that describe any projected temporary street closures or expected traffic delays due to construction vehicles on the roadways.</p> <p>The following elements will be major components of the project TMP:</p> <ul style="list-style-type: none">• A public awareness campaign related to the scheduling of work;• A construction zone enforcement enhancement program (COZEEP);• Use of portable changeable message signs (PCMS);• Advance information signing that will communicate the date, time, and duration of ramp closures;• Plan road closures to minimize impacts on local circulation to the maximum extent feasible; and• Preparation of temporary detour plans, if needed, during the plans, specifications, and estimates (PS&E) phase of the project. (Note: No detours are anticipated at this time.)	District Design/Resident Engineer/Contractor	Final Design/Construction		
Section 3.7 Visual/Aesthetics					
AES-1	All lighting used for the project will be directional, directing light to the highway facility and away from homes and habitats to minimize glare impacts to the night sky, and to avoid affecting background sky views. Glare shields will be used.	District Design/District Landscape Architect/District Biological Studies/Resident Engineer/Contractor	Final Design/Construction		
AES-2	Detention basins and bioswales will be designed and addressed as visually integrated elements of the landscape planting. Contour grading of basins will minimize the visual impact by blending with the surrounding natural landscape features.	District Design/District Landscape Architect/Resident Engineer/Contractor	Final Design/Construction		

APPENDIX G: Environmental Commitments Record (ECR)

State Route 58 (SR-58)
Kramer Junction Expressway Project
PN: 0800000616
EA 08-347700

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
AES-3	Bridge structures will be pigmented an earth tone that is compatible with the native soil color within the project limits. Bridge structures, signs, and other highway appurtenances will be selected for their form, scale, color, aesthetic treatment, spacing, and configuration to enhance compatibility with the rural community and desert landscape design contexts.	District Design/District Landscape Architect/ Resident Engineer/Contractor	Final Design/Construction		
AES-4	Native plantings will be used to minimize the visual impact of the highway and associated detention basins. Drought-tolerant native trees and shrubs will be planted at appropriate locations, especially near the drainages and drainage basins, and at the two proposed interchanges and railroad overcrossing to soften the structures. These interchanges will become the gateways into the community and will be landscaped. Inert materials will also be considered where appropriate to beautify these areas and reduce erosion. The restoration of desert scrub vegetation will include replanting of native vegetation and Joshua trees on disturbed sites, including staging areas, borrow pits, and other areas of surface disturbance. Any portion of existing SR-58 roadway pavement which is no longer needed will be removed, leaving an earthen surface that will be seeded with native seeds.	District Design/District Landscape Architect/District Biological Studies/Resident Engineer/Contractor	Final Design/Construction		
AES-5	Where possible, concrete drainage ditches will be avoided in favor of soft-bottom ditches to reduce urbanizing elements, and to encourage infiltration and vegetation growth. Where required, concrete ditches will be pigmented to blend with adjacent soil.	District Design/District Landscape Architect/ Resident Engineer/Contractor	Final Design/Construction		
AES-6	All disturbed soil areas will be treated with erosion control measures, including seeding with native plant/native grass seeds. For further detail see Measure GEO-2.	District Design/District Landscape Architect/District Biological Studies/Resident Engineer/Contractor	Final Design/Construction		
AES-7	During construction, existing vegetation will be retained to the maximum extent feasible by minimizing the amount of clearing and earthwork. During construction, Environmentally Sensitive Area (ESA) fencing will be provided around trees and vegetation to ensure its preservation.	District Design/District Landscape Architect/District Biological Studies/Resident Engineer/Contractor	Final Design/Construction		

APPENDIX G: Environmental Commitments Record (ECR)

State Route 58 (SR-58)
Kramer Junction Expressway Project
PN: 0800000616
EA 08-347700

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
AES-8	Joshua trees that would be removed will be replanted away from the proposed pavement areas. If onsite relocation is not feasible, Caltrans will contact the San Bernardino County Building and Safety Office for a list of residents willing to adopt and care for the relocated trees. Transportation standards will follow best nursery practices.	District Design/District Landscape Architect/District Biological Studies/Resident Engineer/Contractor	Final Design/Construction		
AES-9	Slopes will be landscaped with native vegetation to reflect vegetation in the surrounding area and to mask the hard lines created by engineered cuts and embankments.	District Design/District Landscape Architect/Resident Engineer/Contractor	Final Design/Construction		
Section 3.8 Cultural Resources					
CR-1	If cultural materials are discovered during construction, all earthmoving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.	Qualified Archaeologist/Resident Engineer/Contractor	Construction		
CR-2	If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the county coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the NAHC, which will then notify the MLD. At this time, the person who discovered the remains will contact Gary Jones, District 8 Native American Coordinator at (909) 383-7505 so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC Section 5097.98 are to be followed as applicable.	Resident Engineer/Contractor	Construction		
CR-3	An Osteologically Trained Archaeological Monitor(s) and Native American Monitor(s) shall be present during all ground disturbing construction activities in sensitive areas, which will be defined after the buried site testing and before completion of final design. In the event that additional cultural deposits are uncovered during construction operations, the archaeological monitor shall be empowered to halt or divert work in the vicinity of the find until the archaeologist is able to determine the nature and the significance of the discovery.	Qualified Archaeologist/Resident Engineer/Contractor	Construction		

APPENDIX G: Environmental Commitments Record (ECR)

State Route 58 (SR-58)
Kramer Junction Expressway Project
PN: 0800000616
EA 08-347700

No.	Task and Brief Description	Responsible Party	Timing/Phase	Action Taken to Comply with Task	Date
CR-3a	Prior to construction, buried site testing will be performed to further define the boundaries of the “sensitive areas.” The buried site testing will include a geo-archaeological analysis of the potential for the presence of buried subsurface deposits. If the results of the buried sites testing indicate that the presence of buried subsurface deposits are “likely,” a Discovery Plan will be prepared and implemented in the event of inadvertent discoveries.	Qualified Archaeologist/ Resident Engineer/Contractor	Construction		
CR-4	An Environmentally Sensitive Area (ESA) will be delineated around the prehistoric component of CA-SBR-15073/H as described in the ESA Action Plan in the Finding of Effect.	Resident Engineer/Contractor	Construction		
CR-5	An Environmentally Sensitive Area (ESA) will be delineated around a portion of site CA-SBR-15085 as described in the ESA Action Plan in the Finding of Effect.	Resident Engineer/Contractor	Construction		
Section 3.9 Hydrology and Floodplains					
HF-1	The project will be designed so that stormwater flows do not overtop the roadway section.	Project Engineer/Resident Engineer	Final Design/PS&E		
HF-2	Culverts in the part of the project area where it is very flat and no flow lines approach the new alignment may require training dikes to concentrate flows into the inlets. The exact size and location will be determined during the project’s final design phase.	Resident Engineer	Final Design		
HF-3	All culverts will be constructed with their inverts on natural ground that approximates the gradient flow line they serve. Placement in such a manner helps prevent bedload deposition in the culvert.	Resident Engineer	Final Design/Construction		
HF-4	As the project area is entirely within a desert area, all culverts will be designed for the 100-year AMC II storm.	Resident Engineer	Final Design		

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HF-5	<p>The following preliminary design features and recommendations will be incorporated during the final design phase of the project in accordance with Caltrans' standard design practice:</p> <ul style="list-style-type: none">• Stormwater flows will not be allowed to overtop the road section,• Channels and ditches will be used to collect and convey flows into one main flow before crossing the road,• A bulking factor between 25 and 50 percent will be considered,• Box culverts will be as wide in span as economically feasible,• Training dikes will be considered for culverts to concentrate flows into the inlets,• Box culverts will be constructed with their inverts on natural ground that approximates the gradient of the flow line they serve,• All culverts will be designed for the 100-year AMC II storm, and• Water velocity at the culvert will be limited to 10 feet per second to prevent excessive scour.	Resident Engineer	Final Design		
Section 3.10 Water Quality and Stormwater Runoff					
WQ-1	<p>The project will comply with the provisions of the Statewide NPDES permit. Treatment BMPs, as described in Section 3 of the Department's Statewide SWMP (Department 2003b) and the Project Planning and Design Guide (PPDG) (Department 2010), will be evaluated prior to completion of the Project Approval and Environmental Document phase and incorporated into the project's engineering plans and specifications during final design. Design pollution prevention BMPs are selected to reduce post-construction discharges. If greater than 90 percent of the Water Quality Volume cannot be infiltrated within State right of way, approved Treatment BMPs will be included to remove general pollutants; for example, infiltration devices or detention basins. Construction site BMPs, as described in WQ-3, will be itemized in the final contract documents, incorporated into the SWPPP, and implemented during the construction period.</p>	Resident Engineer/Contractor	Final Design/Construction		
WQ-2	<p>The contractor will be responsible for preparing a SWPPP according to the Department's standards, incorporating all the BMPs listed in the contract plans, and amending the SWPPP during the course of construction as necessary. The Resident Engineer will review and</p>	Resident Engineer/Contractor	Final Design/Construction		

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	approve the SWPPP. The general contractor will also implement, inspect, and maintain all measures with oversight by the Resident Engineer.				
WQ-3	<p>Table 1-1 of the Department's Construction Site Best Management Practices Manual (Department 2003c) and/or the Department's Storm Water Quality Handbooks, Project Planning and Design Guide (Department 2010) include the following BMPs:</p> <ul style="list-style-type: none">• Temporary soil stabilization• Temporary sediment control• Tracking control• Non-stormwater management• Waste management• Materials storage and handling controls <p>At a minimum, the contractor will implement all of the appropriate BMPs under the minimum requirement column of Table 1-1 of the Department's Construction Site Best Management Practices Manual (Department 2003c) and/or the Department's Storm Water Quality Handbooks, Project Planning and Design Guide (Department 2010). During completion of the final engineering and design plans, specific BMPs will be specified in the contract documents to protect water quality. Specified BMPs would be implemented by the contractor through the SWPPP. The plan will also include post-construction erosion control measures such as stabilization of all disturbed soil areas.</p>	Resident Engineer/Contractor	Final Design/Construction		
WQ-4	Coordination with the LRWQCB and SCE will be required should Alternative 2 be selected to avoid water quality impacts from relocation of the utility substation and the waste water impoundments.	Resident Engineer/Contractor	Final Design/Construction		
WQ-5	Coordination with the USACE, CDFW, and LRWQCB is ongoing and required to minimize water quality impacts to the 13 natural drainages that cross the project alternatives. It is necessary to obtain a WDR from the LRWQCB. The project will require an Approved Jurisdictional Determination from the USACE, a 1602 Lake and Streambed Alteration Agreement from the CDFW, and a 401 Water Quality Certification from LRWQCB.	Resident Engineer/Contractor	Final Design/Construction		

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WQ-6	Construction staging areas are to be sited in upland areas outside stream channels and other surface waters on or around the project site.	Resident Engineer/Contractor	Final Design/Construction		
WQ-7	Buffer areas should be identified and exclusion fencing is to be used to protect the water resources and prevent unauthorized vehicles or equipment from entering or otherwise disturbing the stream channels.	Resident Engineer/Contractor	Final Design/Construction		
WQ-8	Construction equipment will use existing roads.	Resident Engineer/Contractor	Final Design/Construction		
Section 3.11 Geology/Soils/Seismic/Topography					
GEO-1	Earthwork in the project area shall be performed in accordance with the latest edition of the Caltrans Standard Specifications.	Resident Engineer/Contractor	Construction		
GEO-2	<p>During grading and site preparation, all onsite earthwork would be performed in accordance with the following:</p> <ol style="list-style-type: none"> 1. Cut slope. Cut slope for this project shall be 1:1.5 (V:H) or flatter. For planning purposes, the earthwork factor is 1.3 for rock cuts, and 1.05 for cut in alluvium. 2. Grading Factor. A value of 1.3 for earthwork factor in the rock cuts and a value of 1.05 for cuts in alluvium are recommended. These values may be adjusted based on further field exploration and laboratory testing. 3. Embankment. Embankment slope shall be 1:2 (V:H) or flatter. Where the future embankment will be constructed across natural drainage courses, 0.5 feet of alluvium shall be sub-excavated (over-excavated) from the embankment culvert foundation area and replaced as compacted fill. Embankment foundations shall be prepared in accordance with Section 19 of the Standard Specifications. Where embankment foundations cross existing cultivated land, the embankment foundation shall be sub-excavated 2.6 feet and restored to grade with compacted fill. The recommendation may be modified or deleted based on supplemental exploration and testing for the Geotechnical Design Report. Embankment foundations areas disturbed by building demolition or basement backfilling operations should be over-excavated and restored with compacted fill. 4. Structure Foundations. <ol style="list-style-type: none"> a. Retaining wall. The wall foundation soils should be sub- 	Resident Engineer/District Landscape Architect/Contractor	Construction		

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	<p>excavated and restored as compacted fill; either a Type 1 or Type 2 Standard Plan retaining wall can be used. Alternatively, a Mechanically Stabilized Embankment (MSE) wall could be used. The MSE walls are more tolerable to settlement and sub-excavation, and recompaction of the foundation soils would be significantly reduced or eliminated. For planning purposes, assume no sub-excavation for an MSE wall.</p> <p>b. During preparation of the Geotechnical Design Report, bulk samples will be taken from the proposed sub-excavated area for laboratory compaction, remolded, direct shear, sieve analysis, and sand equivalent testing. This data will be used to analyze the bearing capacity, external stability, and suitability of on-site soils as structure backfill.</p> <p>5. Erosion.</p> <p>a. Vegetate and mulch the slope surface and include the use of erosion protection coverings. Specifications would require the embankment construction to be done in phases, with completed slopes covered following each phase of grading. The Preliminary Geotechnical Report defers to the District Landscape Architect for techniques, specifications, and materials in vegetating slopes.</p> <p>b. Time the embankment construction to minimize soil exposure. Precipitation is a key factor in slope erosion. If possible, it would be best not to perform embankment construction during the relatively wet season. The embankment could be constructed during late spring to early summer months and vegetated/mulched prior to the rainy season.</p> <p>c. Divert runoff away from slope surface. Use a combination of pavement cross-slope and AC dikes to prevent flow over the toe of the slope.</p> <p>d. Roughen the slope surface by applying salvaged topsoil (with vegetation) from the clearing and grubbing operation. This would reduce the runoff velocity and enhance the growth of native vegetation.</p> <p>e. Armor the slope using rock fragments derived from blasting/cutting the cut slopes section on the west side of the proposed alignment.</p> <p>f. Build “zoned” embankments such that the sides of the</p>				

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	<p>embankments are equipment width “shells” of rock fill derived from cutting the hard rock segments of the projects.</p> <p>6. Excavation Techniques. Excavations can be accomplished by conventional techniques for this project.</p> <p>7. Settlement. Consolidation tests to further review the primary consolidation estimates for the higher embankment as well as the potential for collapsible soils will be needed.</p>				
Section 3.12 Paleontology					
PA-1	Grading, excavation, and other surface and subsurface excavation in defined areas of the proposed project have the potential to affect nonrenewable fossil resources. A Paleontological Mitigation Plan (PMP) shall be prepared during final project design by a qualified paleontologist. The PMP will detail monitoring and the measures to be implemented in the event of paleontological discoveries. The PMP will include, at a minimum, the following elements.	Qualified Paleontologist/Resident Engineer/Contractor	Pre-Construction/ Construction		
PA-2	Required 1-hour preconstruction paleontological awareness training for earthmoving personnel, including documentation of training, such as sign-in sheets, and hardhat stickers, to establish communications protocols between construction personnel and the Principal Paleontologist.	Qualified Paleontologist/Resident Engineer/Contractor	Pre-Construction		
PA-3	There will be a signed repository agreement with an appropriate repository that meets Caltrans requirements and is approved by Caltrans.	Environmental Liaison/Resident Engineer/Contractor	Final Design/ Pre-Construction		
PA-4	Monitoring, by a Principal Paleontologist, of Pleistocene older alluvium during excavation.	Qualified Paleontologist/Resident Engineer/Contractor	Construction		
PA-5	Field and laboratory methods that meet the curation requirements of the appropriate repository will be implemented for monitoring, reporting, collection, and curation of collected specimens. Curation requirements are available for public review at the appropriate repository.	Resident Engineer/Contractor	Construction		
PA-6	All elements of the PMP will follow the PMP Format published in the Caltrans Standard Environmental Reference (Caltrans 2003).	Resident Engineer/Contractor	Construction		

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PA-7	A Paleontological Mitigation Report discussing findings and analysis will be prepared by a Principal Paleontologist upon completion of project earthmoving. The report will be included in the environmental project file and also submitted to the curation facility.	Qualified Paleontologist/ Resident Engineer/Contractor	Final Design/Construction		
Section 3.13 Hazardous Waste/Materials					
HAZ-2	A geophysical survey and exploratory potholing will be performed to confirm the location of the abandoned oil well and determine whether it is located within the construction zones of Alternative 1 and Alternative 1A. A Preliminary Site Investigation was performed; no evidence of an oil well was observed.	Resident Engineer/Contractor	Design/PS&E/ Construction	Site investigation	February 2014
HAZ-3	Shallow soil sampling for petroleum, VOCs, metals, and PCBs will be conducted near identified drum storage areas, USTs, ASTs, sumps/clarifiers, wastewater trenches, and debris-covered areas within the environmental footprint of all alternatives to determine if special handling and soil disposal is needed. A Preliminary Site Investigation was performed, including soil sampling; no hazardous waste was detected.	Resident Engineer/Contractor	Design/PS&E/Right of Way	Site investigation	February 2014
HAZ-4	Soil sampling for petroleum hydrocarbons, VOCs, metals, and PCBs will be conducted in the wastewater treatment pond where it encroaches onto the selected alternative's right-of-way. The preferred alternative (Alternative 1A) does not encroach in this area. No site investigations were performed.	Resident Engineer/Contractor	Design/PS&E/Right of Way		
HAZ-5	Shallow soil sampling for petroleum hydrocarbons, VOCs, metals, asbestos, pesticides, semi-VOCs, and PCBs will be performed at areas around the railroad tracks that may be disturbed during construction activities. A Preliminary Site Investigation was performed, including soil sampling. No hazardous waste was detected.	Resident Engineer/Contractor	Design/PS&E/ Construction		
HAZ-6	All soil excavation conducted on-site will be monitored by the construction contractor for visible soil staining, odor, and the possible presence of unknown hazardous-material sources. Contaminated soils will be segregated and profiled for disposal.	Resident Engineer/Contractor	Design/PS&E/ Construction		
HAZ-7	Septic tanks and leach fields that fall within the construction zone will be removed and disposed of.	Resident Engineer/Contractor	Design/PS&E/ Construction		

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HAZ-8	For structures within the proposed right-of-way of the selected alternative that require demolition, an asbestos pre-demolition survey will be completed prior to the disturbance of building materials to determine the asbestos content. A certified asbestos contractor will be retained to abate any identified ACM issues in accordance with all applicable laws, including OSHA guidelines.	Resident Engineer/Contractor	Design/PS&E/ Construction		
HAZ-9	In the event that ACMs that were not identified in the asbestos study are uncovered during demolition/renovation activities, the contractor must stop work and have the materials tested for asbestos content. Any demolition or renovation of a structure will require the Mojave Desert Air Quality Management District (MDAQMD) to be notified and fees to be submitted at least 10 days prior to proceeding with demolition work; failure to do so may result in being fined for regulatory non-compliance.	Resident Engineer/Contractor	Design/PS&E/ Construction		
HAZ-10	In the event that alteration or demolition of the painted roadway is required, a LBP survey shall be conducted prior to disturbing highway structural materials to evaluate the lead content of the painted surface.	Resident Engineer	Design/PS&E/ Pre-Construction		
HAZ-11	Because of the possible presence of elevated lead concentrations in the yellow thermoplastic and yellow painted traffic stripes along the existing highway, it is recommended that special provisions be included that require the contractor to manage removed striping and pavement markings properly (i.e., as a hazardous waste) and have and implement a lead compliance plan prepared by a Certified Industrial Hygienist (CIH).	Resident Engineer	Design/PS&E/ Pre-Construction		
HAZ-12	Caltrans Waste Management and Materials Pollution Control BMPs, Material Delivery and Storage and Material Use: Thermoplastic waste will be disposed of in accordance with Standard Specification 14-11.07. Environmental rules and requirements, as outlined in the Caltrans Construction Manual, 7-103D (1), Caltrans- and Contractor- Designated Disposal, Staging, and Borrow Sites, will be followed and/or implemented.	Resident Engineer/Contractor	Final Design/ PS&E/Construction		

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HAZ-13	A site safety plan that addresses issues related to the management of potential health and safety hazards to workers and the public will be prepared and implemented prior to initiation of the proposed construction activities. Instructions, guidelines, and requirements for handling hazardous materials will be included in the site safety plan to ensure employee safety, as provided in Chapter 16, Hazardous Materials Communication Program, of the Caltrans Safety Manual.	Resident Engineer/Contractor	Final Design PS&E		
HAZ-14	Wastes and petroleum products used during construction will be collected, transported, and removed from the project site in accordance with RCRA regulations and federal OSHA standards, including Waste Management and Materials Pollution Control BMPs, Spill Prevention and Control, and Materials and Waste Management BMPs, Hazardous Waste Management. All hazardous waste will be stored, transported, and disposed of as required in Title 22, CCR, Divisions 4.5 and 49; CFR 261-263; and Caltrans requirements, as stated in Section 7-109, Solid Waste Disposal and Recycling Reporting, of the Caltrans Construction Manual.	Resident Engineer/Contractor	Final Design PS&E/ Pre-Construction		
HAZ-15	Additional ADL studies will be performed at locations where the selected right-of-way crosses or includes the existing right-of-way and previous ADL studies were not performed. An ADL survey was completed in December 2013. ADL is non-hazardous in the project area.	Resident Engineer/Contractor	Final Design PS&E/ Pre-Construction		
HAZ-16	A lead compliance plan will be prepared under Section 7-1.02K(6)(j)(ii) of the Caltrans Standard Specifications. The lead compliance plan will include provisions regarding the use of earth material. If earth material will be relinquished to the contractor, the level of lead concentration and the depth of the earth material in which the lead was detected will be disclosed. If earth material will not be relinquished to the contractor, all excavated earth material with lead, which is typically found within the top two feet of material in unpaved areas of the highway, will be reused within the project limits.	Resident Engineer/Contractor	Final Design PS&E/ Pre-Construction		
HAZ-17	Earth material containing lead will be handled according to all applicable laws, rules, and regulations, including those of the following agencies: (1) Cal/OSHA, (2) the California Regional Water Quality Control Board, Region 6 – Lahontan, and (3) the California Department of Toxic Substances Control.	Resident Engineer/Contractor	Final Design PS&E/ Pre-Construction		

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HAZ-18	As recommended in the BNSF railroad investigation conducted as part of the Preliminary Site Investigation, the contractor will ensure that excess soils not used on site are disposed of as non-hazardous waste at a Class II facility. Excess soils may be reused within the construction zone, but off-site reuse is not permitted. In the event that stained or odorous soils are encountered during excavation, soils will be segregated, stockpiled, and characterized for disposition in accordance with local, state, and federal regulations and requirements. All work will be conducted under the guidance of a soil management plan (SMP) prepared by a Professional Engineer or Professional Geologist. The purpose of the SMP is to identify measures that would be implemented during construction activities to minimize dust and potential exposure to workers.	Resident Engineer/Contractor	Final Design PS&E/ Pre-Construction		
HAZ-19	If a commercial landfill will be used to dispose of earth material, (1) the earth material will be transported to a Class II or Class III landfill that is appropriately permitted to receive the material and (2) the contractor will be responsible for identifying the appropriately permitted landfill that will receive the earth material and paying all associated trucking and disposal costs, including costs for any additional sampling and analysis required by the receiving landfill. If hazardous waste material is discovered during construction, such material must be transported under manifest to a permitted Class I disposal facility.	Resident Engineer/Contractor	Final Design PS&E/ Pre-Construction		
HAZ-20	Coordination with the San Bernardino County Department of Airports and impacted airstrip and Boron Airport owners will be conducted to establish the appropriate construction or closure notification and safety procedures. The airstrip and Boron Airport do not appear to meet the requirements of CFR Title 14 Part 77.9; however, if during the coordination process it is determined that the FAA should be notified, then all notification requirements in accordance with CFR Title 14 Part 77.9 will be followed.	Resident Engineer/Contractor	Final Design PS&E/ Pre-Construction		

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Section 3.14 Air Quality					
AQ-1	<p>The Department will require implementation of effective and comprehensive avoidance and minimization measures, as detailed in the Department's Standard Specifications, Section 7-1.01F (Air Pollution Control), and MDAQMD Rule 403.2 (Fugitive Dust Control).</p> <p>Measures to reduce exhaust emissions specified in Section 7-1.01F (Air Pollution Control) may include the following:</p> <ul style="list-style-type: none">• Maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would have their engines turned off when not in use to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.• Properly tune and maintain all equipment in accordance with the manufacturer's specifications.• Use electricity from power poles rather than temporary diesel- or gasoline-powered generators if and/or where feasible.• Use on-site mobile equipment powered by alternative fuel sources (i.e., methanol, natural gas, propane, butane) as feasible.• Develop a construction traffic management plan that includes: (1) consolidating truck deliveries; (2) providing a rideshare or shuttle service for construction workers; and (3) providing dedicated turn lanes for construction trucks and equipment on- and off-site.• Use solar-powered changeable message signs.	Resident Engineer/Contractor	Construction		

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AQ-2	<p>Measures to reduce particle emissions specified in MDAQMD Rule 403.2 (Fugitive Dust Control) include the following:</p> <p>The owner or operator of any construction/demolition source shall:</p> <ul style="list-style-type: none">• Use periodic watering for short-term stabilization of disturbed surface areas to minimize visible fugitive dust emissions. For purposes of this rule, use of a water truck to moisten disturbed surfaces and actively spread water during visible dusting episodes shall be considered adequate to maintain compliance.• Take actions to prevent project-related trackout onto paved surfaces.• Cover loaded haul vehicles while operating on publicly maintained paved surfaces.• Stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than 30 days, except when such a delay is due to precipitation that dampens the disturbed surface enough to eliminate visible fugitive dust emissions.• Clean up project-related trackout or spills on publicly maintained paved surfaces within 24 hours.• Reduce nonessential earthmoving activity under high wind conditions. For purposes of this rule, a reduction in earthmoving activity when visible dusting occurs shall be considered enough to maintain compliance.	Resident Engineer/Contractor	Construction		

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Section 3.15 Noise and Vibration					
NOI-1	<p>To reduce noise levels from construction to the extent that is technically feasible and avoid unnecessary annoyance from construction noise, the construction noise control measures listed below will be implemented.</p> <ul style="list-style-type: none">• To the extent practicable, avoid using construction equipment or any other activity that could generate high noise levels near homes. If nighttime construction is required, the community will be advised.• Place maintenance yards, batch plants, haul roads, and other construction-oriented operations in locations that would be the least disruptive to the community.• Hold community meetings to explain to area residents the construction work, time involved, and control measures to be taken to reduce the impact of construction work, as appropriate.• Schedule the timing and duration of construction activities to minimize noise impacts at noise-sensitive locations.• As practicable, use noise-attenuating “jackets” or portable noise screens to provide shielding for pavement breaking, jack hammering, or other similar activities when work is close to noise-sensitive areas.• Comply with Caltrans’ Standard Specification 14-8.02A (2010):<ul style="list-style-type: none">○ Do not exceed 86 dBA Lmax at 50 feet from the job site activities from 9 p.m. to 6 a.m.○ Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.	Resident Engineer/Contractor	Construction		

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Section 3.17 Natural Communities					
BIO-1	In coordination with USFWS and CDFW two oversized culverts, east and west of US-395, will be installed as part of the project. These culverts will be a minimum of six feet tall and 10 feet wide. These will be box culverts, which are a specific requirement for desert tortoise and Mohave ground squirrel and have been designed as such. They will also accommodate small to medium sized animals. Desert tortoise fencing will be used to direct wildlife to them.	Environmental Coordinator/District Biological Studies/Project Engineer/Resident Engineer/Contractor	Final Design/PS&E/Construction		
Section 3.18 Wetlands and Other Waters					
BIO-2	Water Pollution Control: Avoidance and minimization measures to be utilized in order to protect aquatic resources during the course of the project will include the implementation of BMPs (Department 2003a) and the Storm Water Pollution Prevention Plan (SWPPP) (Department 2003b) during all phases of construction.	Environmental Coordinator/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		
BIO-3	Temporary Environmentally Sensitive Area (ESA) fencing: An ESA fence will be installed around all washes within the right of way that will not be impacted by the project.	Qualified Biologist District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Pre-Construction		
BIO-4	Biological Monitor. A qualified construction monitor will assure that construction activities will not impact the washes delimited by the ESA fencing.	Qualified Biologist District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		
BIO-5	The proposed project will require the acquisition of mitigation for federal and state listed species. Mitigation ratios varied from 3:1 to 5:1. This land is expected to include desert washes that should offset the impact for the project. There is no aquatic/riparian vegetation that will require any other additional mitigation. If the mitigation land acquired for the project does not include sufficient desert washes, supplementary mitigation may be required by the agencies with jurisdiction over the waters.	Qualified Biologist District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		

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Section 3.19 Plant Species					
BIO-6	Preconstruction surveys for rare plants will be conducted by a qualified biologist during the appropriate blooming period. Any plants identified will be flagged and avoided, if feasible.	Environmental Liaison/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/ Pre-Construction		
BIO-7	The project design will avoid impacts to special-status plants to the extent feasible.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		
BIO-8	Temporary Fence (Type ESA). ESA fencing will be established around those populations of special-status plants that are to be protected in place to prohibit all construction activities and access from impacting the rare plant populations within the project area.	Environmental Liaison/ District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Pre-Construction		
BIO-9	Seeds will be collected from all those plant populations deemed appropriate for seed relocation if suitable habitat is available.	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		
BIO-10	Biological Monitor. A qualified biological monitor will monitor construction activities to ensure avoidance of any construction-related impacts to special status plant species.	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		
BIO-11	Species Protection Measures will be made to ensure that temporary staging areas, storage areas, and access roads involved with this project will occur in the area of permanent direct impact. Access to the project site will be gained from the existing SR-58. No new access roads will be built as part of this project. Staging areas and equipment storage will take place on existing roads or within the proposed right-of-way of the realigned SR-58.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		

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BIO-12	Joshua trees within the direct impact area with a circumference of 50 inches measured at four feet, measuring 15 feet high, or occurring in a cluster of 10 or more within close proximity to each other will be transplanted or stockpiled for future transplanting to the extent feasible. Joshua trees will be shown on the plans for avoidance or transplanting.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		
BIO-13	An Environmentally Sensitive Area (ESA) will be established around all Joshua trees within the project area that are to be protected in place, as shown on plans. To prohibit all construction activities and access from impacting the Joshua trees within the project area, temporary ESA fencing would be placed around the Joshua trees.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Pre-Construction		
Section 3.20 Animal Species					
BIO-14	A preconstruction survey of the project site for burrowing owl will be conducted; the time lapse between surveys and site disturbance will be as short as possible and will be determined based on consultation with CDFW, but will not exceed 7 days prior to commencing construction activities.	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/ Construction Liaison	Final Design/PS&E/ Pre-Construction		
BIO-15	Species Protection. Measures will be implemented to ensure that temporary staging areas, storage areas, and access roads for this project will occur in the area of permanent direct impact. Access to the project site will be gained from the existing SR-58. No new access roads will be built as part of this project. Staging areas and equipment storage will take place on existing roads or within the proposed right-of-way of the realigned SR-58.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Pre-Construction		
BIO-16	Species Protection: If burrowing owls are found on-site during the preconstruction sweep: <ul style="list-style-type: none"> Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a biologist can verify through non-invasive methods that either the owls have not begun egg laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent flight. A Burrowing Owl Mitigation and Monitoring Plan will be submitted to CDFW for review and approval. All relocation shall be approved by CDFW. 	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		

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BIO-17	<p>If, during preconstruction surveys, a burrowing owl is encountered, habitat compensation will be assessed and coordinated with CDFW during preparation of the Burrowing Owl Mitigation and Monitoring Plan.</p> <p>Appropriate mitigation lands for burrowing owl will be determined during preparation and CDFW agency approval of the Burrowing Owl Mitigation and Monitoring Plan. CDFW may allow the mitigation lands acquired following the above mitigation ratios to account for more than just burrowing owl, if species-specific habitat criteria are met in the habitat acquisition proposal. As provided in CDFW (2012) the mitigation for permanent habitat loss necessitates replacement with an equal or greater habitat area.</p>	Qualified Biologist District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Pre-Construction		
BIO-18	<p>To avoid any impacts to migratory birds (including loggerhead shrike and Le Conte's thrasher), vegetation removal must take place between September 15 and February 15 (outside of the breeding season). If, because of construction schedules, it is necessary to remove vegetation, including trees, during the breeding season (February 16 through September 14), a biological construction monitor must perform a preconstruction survey of each individual tree and/or the entire area where vegetation will be removed. All measures shall be taken to minimize impacts on nesting birds. A preconstruction sweep for nesting birds will be conducted prior to construction activities outside of the nesting season as well. The sweep will include areas used for staging, storage, sign placement, or parking. If an active bird nest is detected during surveys, a nest avoidance buffer will be implemented with a radius of 100 feet or as determined by the biological monitor. Depending on the species and nesting stage, it may be prudent to have a biological monitor present during construction to monitor nest activity while still allowing construction to take place.</p>	Qualified Biologist District Biological Studies/Project Engineer/Resident Engineer/Construction Liaison	Final Design/PS&E/Pre-Construction		
BIO-19	<p>A preconstruction survey will take place to ensure that no American badgers are located within the project limits.</p>	Qualified Biologist District Biological Studies/Project Engineer/Resident Engineer/Construction Liaison	Final Design/PS&E/Pre-Construction		
BIO-20	<p>Biological Monitor: A qualified biological monitor will monitor construction activities to ensure avoidance of any construction-related impacts on American badger.</p>	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Construction Liaison	Final Design/PS&E/Pre-Construction		

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BIO-21	Species Protection: If a burrow occupied by badgers is found during construction, all construction activities will cease in the vicinity of the burrow, and coordination with CDFW will take place so that appropriate protective measures can be implemented.	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		
Section 3.21 Threatened and Endangered Species					
BIO-22	<p>Field Contact Representative or Resident Engineer. Caltrans will assign/designate a staff person to act as the Field Contact Representative (FCR) or Resident Engineer (RE) with specific experience in the implementation of environmental compliance programs. The FCR/RE will serve as the environmental compliance monitor for the project. They will be present throughout construction period. This individual will be the liaison among the wildlife agencies, FHWA, Authorized Biologist(s), and Biological Monitor(s). The FCR/RE and Authorized Biologist will work closely together to ensure compliance with the various conditions and requirements of project permits and approvals set forth in the biological opinion and supporting plans appended to the biological assessment.</p> <p>Caltrans's FCR/RE will act on the advice of the Authorized Biologist(s) and Biological Monitor(s) to ensure conformance with the protective measures set forth in the biological opinion. The Authorized Biologist(s) will have the authority to immediately stop any activity that is not in compliance with these conditions and/or order any reasonable measure to avoid take of an individual of a listed species. If required by an Authorized Biologist and Biological Monitor(s), Caltrans's FCR/RE will halt all construction-related ground disturbance and other activities in areas specified by the Authorized Biologist(s).</p>	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		

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BIO-23	<p>Authorized Biologists and Biological Monitors. Caltrans will review the credentials of all individuals seeking approval as Authorized Biologists prior to being submitted to USFWS to ensure the individuals possess the appropriate experience and training to serve as Authorized Biologists. Caltrans will then submit the credentials of appropriate individuals to USFWS and CDFW for approval at least 30 days prior to the time they must be in the field.</p> <p>The Authorized Biologist will be responsible for all aspects of clearance surveys, monitoring, developing and implementing the worker environmental awareness program, contacts with agency personnel, reporting, and long-term monitoring and reporting and be present, along with approved Biological Monitors, during construction, operation, and maintenance that could affect desert tortoises. Biological Monitors will be approved and supervised by the Authorized Biologist.</p>	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Pre-Construction		
BIO-24	<p>Pre-Construction Surveys. Within desert tortoise habitat, Authorized Biologists will conduct pre-construction surveys of the project area including the right-of-way, staging areas, access routes, and all other construction sites. The surveys will also cover the adjacent undeveloped lands located between the existing and new alignment. Authorized Biologists will survey the right-of-way for desert tortoises using techniques providing 100-percent coverage of the area proposed for disturbance. Additional transects will be conducted on each side of the right-of-way to locate tortoises and their burrows within 50 feet of the right-of-way. Transects will be no greater than 10 meters (30 feet) apart. If construction occurs during the desert tortoise active season (March 1 through October 31), or when temperatures and environmental conditions are conducive to tortoise activity as determined by an Authorized Biologist, the survey will occur within 48 hours of surface disturbance. During the inactive season (November 1 through February 28, except as noted above), when conditions are not conducive to tortoise activity as determined by an Authorized Biologist, one survey must occur within 72 hours of surface disturbance or up to five days in advance of disturbance.</p> <p>The Authorized Biologist will flag all desert tortoise burrows, and will only excavate burrows and move desert tortoises if project activities are likely to affect them. If a desert tortoise is moved, the Authorized Biologist will move it into appropriate habitat adjacent to the project site, but will not move it more than 1,000 feet if it is an adult or 300 feet if it is a juvenile or hatchling. Following the</p>	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		

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	preconstruction survey and the relocation of desert tortoises if determined necessary by the Authorized Biologist, the contractor will install permanent fencing to exclude desert tortoises from all work areas and rights-of-way, as specified in Measure BIO-29.				
BIO-25	<p>Biological Resource Information Program. Caltrans will be responsible for ensuring that all workers at the site receive worker environmental awareness training (Worker Environmental Awareness Program [WEAP]) prior to and throughout construction. The training will be administered to all on-site personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. Caltrans will implement the WEAP to ensure that project construction and operation are both conducted within a framework of safeguarding environmentally sensitive resources. The WEAP will be available in English and Spanish. The Applicant will present the WEAP to all workers on site throughout the life of the project. Multiple sessions of the presentation may be given to accommodate training all workers. The WEAP will include but will not be limited to the following:</p> <ol style="list-style-type: none"> Be developed by or in consultation with the Authorized Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species, are made available to all participants; Provide an explanation of the purpose and function of the desert tortoise minimization measures and the possible penalties for not adhering to them; Inform workers that the FCR/RE, Authorized Biologist(s), and Biological Monitor(s) have the authority to halt work in any area where there would be an unauthorized adverse impact to biological resources if the activities continued; Discuss general safety protocols such as hazardous substance spill prevention and containment measures and fire prevention and protection measures; Provide an explanation of the sensitivity and locations of the vegetation, biological resources, and habitat within and adjacent to work areas, and proper identification of these resources; Place special emphasis on desert tortoise and southwestern willow flycatcher, including information on physical 	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		

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	<p>characteristics, photos, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and conservation measures required for the project;</p> <p>g. Provide contact information for the Authorized Biologist(s) and Biological Monitor(s) for WEAP trainees to submit late comments and questions about the material discussed in the program, as well as to report any dead or injured wildlife species encountered during project-related activities;</p> <p>h. Direct all WEAP trainees to report all observations of listed species and their sign to an Authorized Biologist for inclusion in the monthly compliance report;</p> <p>i. Include a training acknowledgment form to be signed by each worker indicating that they received training and will abide by the guidelines; and</p> <p>j. Provide an explanation regarding the protective measures to reduce the adverse effects associated with predation of desert tortoises by common ravens (<i>Corvus corax</i>) and other known predators of desert tortoise.</p> <p>Only workers who have successfully completed the education program will be allowed to work on the project site.</p>				
BIO-26	<p>Species Protection. Caltrans will ensure that the Authorized Biologist(s) will follow the procedures for handling tortoises in the USFWS field manual (2009). Only the Authorized Biologist(s) will move desert tortoises and then solely for the purpose of moving them from harm's way. The Authorized Biologist(s) will document each desert tortoise encounter/handling with the following information, at a minimum: a narrative describing circumstances; vegetation type; date; conditions and health; any apparent injuries and state of healing; if moved, the location from which it was captured and the location in which it was released; maps; whether animals voided their bladders; and diagnostic markings (that is, identification numbers marked on lateral scutes).</p> <p>Tortoises found in the project area will be handled and relocated by an Authorized Biologist in accordance with the most current USFWS protocol in the Desert Tortoise Field Manual. Tortoises excavated from burrows must be relocated to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or unoccupied natural burrows must occur 150 to 300 feet from the original burrow. Relocated tortoises will not be placed in existing</p>	<p>Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison</p>	<p>Final Design/PS&E/Pre-Construction</p>		

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	<p>occupied burrows. If an existing burrow that is similar in size, shape, and orientation to the original burrow is unavailable, the Authorized Biologist(s) would construct one. Desert tortoises moved during inactive periods will be monitored for at least two days after placement in new burrows to ensure their safety. The Authorized Biologist(s) would be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely. The relocated tortoise will be monitored during construction activities to ensure that it shelters and does not return to the right-of-way and be in harm's way.</p> <p>Desert tortoises that are found aboveground and need to be moved from harm's way will be placed at unoccupied shelter sites including unoccupied soil burrows, spaces within rock outcrops, caliche caves, and the shade of shrubs at 150 to 300 feet from the point of encounter. During periods of the year when desert tortoises are generally active, a Biological Monitor will monitor these individuals to ensure that they do not move back into harm's way or exhibit signs of physiological stress (e.g., gaping, foaming at the mouth). If a desert tortoise exhibits any signs of physiological stress, the Authorized Biologist(s) will immediately undertake actions to stabilize it (e.g., place it in a climate-controlled facility, shade it, lightly mist it with water); the desert tortoise will be released only after it is exhibiting normal behavior and temperatures are appropriate.</p> <p>Whenever a vehicle or construction equipment is parked longer than two minutes within desert tortoise habitat, workers will inspect the ground around and underneath the vehicle for desert tortoises prior to moving the vehicle. If the worker observes a desert tortoise, he or she will contact an Authorized Biologist or Biological Monitor. If possible, the desert tortoise will be left to move out of harm's way on its own. If the desert tortoise does not move out of harm's way within 15 minutes, an Authorized Biologist will move it out of harm's way in accordance with the handling procedures.</p> <p>Caltrans will ensure that no project personnel will exceed a vehicle speed limit of 20 miles per hour during project activities on unpaved access roads within desert tortoise habitat.</p> <p>To prevent entry by common ravens (<i>Corvus corax</i>) and other predators such as the coyote (<i>Canis latrans</i>), trash will be placed in a sealed container and emptied at the close of business each day. The project area will be kept as clean of debris as possible. Each water</p>				

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	source will be caged or netted to prevent use by ravens. Caltrans will ensure that workers do not bring firearms and pets into the project area. This measure does not apply to law enforcement personnel and working dogs.				
BIO-27	Locating a Dead or Injured Tortoise. The Authorized Biologist will notify USFWS within 24 hours upon locating a dead or injured desert tortoise during construction, operation, and maintenance of the project. The notification will be made by telephone and in writing or by electronic mail to BLM and USFWS. The report will include the date and time of the finding or incident (if known), location of the carcass, a photograph, cause of death (if known), and other pertinent information. Caltrans will submit desert tortoises that are fatally injured during project-related activities for necropsy, at its expense, as outlined in Berry (2001).	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		
BIO-28	Designated Areas. Caltrans will confine all project activities to the right-of-way, approved access roads, and storage areas. All storage areas and vehicle turn-around locations will use previously disturbed habitat as much as possible and will require USFWS approval prior to the initiation of project activities. Caltrans will restrict project vehicles to the right-of-way, designated areas, or existing roads and will prohibit off-road or cross-country travel except in emergencies. Caltrans will not create any new dirt or paved roads. The project construction boundaries will be clearly delineated with fencing, stakes, or flagging. If unforeseen circumstances require disturbance beyond the project right-of-way, Caltrans will notify USFWS immediately. Caltrans will ensure that the Authorized Biologist or Biological Monitor will inspect any open trenches or excavations within project work sites at least three times daily and prior to backfilling. If a desert tortoise is located within an open trench, a USFWS-authorized biologist will remove it. Project personnel will cover open trenches or excavations with metal plates if they are left open overnight or on the weekend to prevent desert tortoises from entering them.	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		

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BIO-29	<p>Permanent Fence. Following preconstruction surveys and the relocation of desert tortoises if determined necessary by the Authorized Biologist but prior to the start of construction, Caltrans will require the contractor to install permanent fencing to exclude desert tortoises from all work areas and rights-of-way under the direction of an Authorized Biologist. Caltrans will construct the fence according to the protocols provided in Chapter 8 of the Desert Tortoise Field Manual (USFWS 2009). If desert tortoises are encountered during installation of the fence, the Authorized Biologist will move the individual the shortest distance possible to an area outside the fence where it will be safe. The Authorized Biologist will use his or her judgment regarding the best measures to use to ensure the desert tortoise does not immediately return to the area inside of the fence. The Authorized Biologist may contact USFWS or CDFW to discuss specific situations if the need arises.</p> <p>After the fencing is installed and before the onset of ground-disturbing activities, the Authorized Biologist will survey the area and remove all desert tortoises. The Authorized Biologist will survey the area as much as is needed to ensure that all desert tortoises have been found; generally, all desert tortoises will be considered to have been removed once a complete survey of the work area is conducted without finding any additional animals. Desert tortoises that are found inside the fenced area will be placed on the other side of the desert tortoise exclusion fence. The Authorized Biologist will use his or her best judgment to determine the optimal location for placement of desert tortoises. In general, desert tortoises will be moved to the nearest safe area south of the road realignment.</p> <p>Caltrans will maintain the integrity of the fence to ensure that desert tortoises are excluded from the work area during construction and from the roadway thereafter. The fence will be inspected regularly; initially, it will be inspected on a monthly basis, but Caltrans may adopt a different schedule, based on experience. Caltrans will inspect and, if necessary, repair the fence immediately after any rainstorm that occurs during times of the year or at temperatures when desert tortoises are likely to be active.</p>	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		

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BIO-30	<p>Construction Monitoring. An appropriate number of Authorized Biologists and Biological Monitors will be available during construction for the protection of desert tortoise. Authorized Biologists will be assigned to monitor each area of activity where conditions exist that may result in <i>take</i> of desert tortoise (e.g., clearing, grading, re-contouring, restoration activities).</p> <p>The Biological Monitor will survey ahead of the project activities and halt construction if he or she finds a desert tortoise in the path of construction equipment. Project activities will not resume until the desert tortoise moves out of harm's way or the Authorized Biologist has relocated it.</p> <p>An Authorized Biologist or Biological Monitor will inspect all excavations that are not within desert tortoise exclusion fencing on a regular basis (several times per day) and immediately prior to filling of the excavation. If project personnel discover a desert tortoise in an open trench, an Authorized Biologist will move it to a safe location in accordance with the Desert Tortoise Field Manual (2009).</p>	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		
BIO-31	Biological Monitor. A qualified biological monitor will monitor construction activities to ensure avoidance of any construction activities related to MGS.	Qualified Biologist/District Biological Studies/ Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		
BIO-32	Biological Resource Information Program. MGS Awareness Training will be provided and integrated with WEAP Training prior to construction.	Qualified Biologist/District Biological Studies/ Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		
BIO-33	Species Protection. If any MGS are injured or killed during the course of construction, work must stop in the immediate area, the animal must be left in place as is, and the project monitor and the Resident Engineer will be immediately notified. Only the authorized biologist will handle and transport the animal to a qualified veterinarian.	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/Construction Liaison	Final Design/PS&E/Construction		

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BIO-34	Caltrans, CDFW, and USFWS agreed to mitigate affected areas east of Fornessa Road with a mitigation ratio of 5:1, including the critical habitat areas east of US-395. Due to habitat quality, all areas west of Fornessa Road will be mitigated at a ratio of 3:1. The total impact area to be mitigated is shown in Table 3.21-2 in Section 3.21.3.1. Alternative 3 is the alternative that would require more mitigation for desert tortoise, followed by Alternative 1 and Alternative 1A. Since Alternative 2 is located within more previously disturbed areas, and areas already mitigated by previous projects, it is the alternative that would require less mitigation for this project. These mitigation ratios are combined with the mitigation ratios for the MGS.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		
BIO-35	In coordination with CDFW and USFWS, two oversized culverts, east and west of US-395, will be installed as part of the project. These culverts will be a minimum of 6 feet tall and 10 feet wide.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		
BIO-36	Similar to compensatory mitigation for desert tortoise, Caltrans and CDFW have agreed to mitigate affected areas east of Fornessa Road with a mitigation ratio of 5:1. Due to habitat quality all areas west of Fornessa Road will be mitigated at a ratio of 3:1. The total impact area to be mitigated is disclosed on Table 3.21-2 in Section 3.21.3.1. Alternative 3 is the alternative that would require more mitigation for MGS, followed by Alternative 1 and Alternative 1A. Since Alternative 2 is located within more previously disturbed areas, and areas already mitigated by previous projects, it is the alternative that would require less mitigation for this project. These mitigation ratios are combined with the mitigation ratios for desert tortoise.	Qualified Biologist/District Biological Studies/Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		
BIO-37	In coordination with CDFW two oversized culverts, east and west of US-395 will be installed as part of the project. These culverts will be a minimum of 6 feet tall and 10 feet wide.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		
Section 3.22 Invasive Species					
BIO-38	Measures to minimize the introduction or spread of nonnative species would include cleaning all equipment and vehicles with water (or another Caltrans approved method) to remove dirt, seeds, vegetative material, or other debris before entering and upon leaving the project site and the removal and disposal off site of existing nonnative species within the project area.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		

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BIO-39	Landscaping and erosion control measures proposed during this Department project will not contain invasive species in the plant selections or seed mixtures.	District Biological Studies/ Project Engineer/Resident Engineer/Contractor/ Construction Liaison	Final Design/PS&E/ Construction		